

5-015A070

No. \_\_\_\_\_

Date JAN 15 1985

Fee \$ \_\_\_\_\_

ICC Washington, D.C.



Terminal Tower  
P. O. Box 6419  
Cleveland, Ohio 44101  
216 623 2200

216-623-2462

14547  
RECORDATION NO. \_\_\_\_\_ Filed 1425

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

JAN 15 1985 -2 10 PM

January 10, 1985

Mr. James H. Bayne, Secretary  
Interstate Commerce Commission  
12th Street and Constitution Avenue, N.W.  
Washington, D.C. 20423

Att: Recordation Unit

Re: Lease Agreement

Dear Mr. Bayne:

Enclosed are executed counterparts Nos. 5 and 6 (of 6) of Lease Agreement dated as of November 1, 1984, between Fruit Growers Express Company, 3220 Duke Street, Alexandria, VA 22314 (Lessor) and The Chesapeake and Ohio Railway Company (C&O) and The Baltimore and Ohio Railroad Company (B&O) (collectively, the Lessee), P.O. Box 6419, Cleveland, Ohio 44101.

The equipment covered by the above documents consists of three hundred fifty (350) refrigerated boxcars, AAR mechanical designation RBL. Two hundred thirty-five (235) of the cars will be equipped with standard bulkheads; of these, ninety (90) will bear C&O Road Nos. 402000-402089, inclusive, and one hundred forty-five (145) will bear B&O Road Nos. 402090-402234, inclusive. One hundred fifteen (115) of the cars will be equipped with pneumatic bulkheads; of these, thirty-eight (38) will bear C&O Road Nos. 403000-403037, inclusive, and seventy-seven (77) will bear B&O Road Nos. 403038-403114, inclusive. The C&O cars also will be marked "The Chesapeake and Ohio Railway Company," "C&O," "Chessie System" or in some other appropriate manner. The B&O cars similarly will be marked "The Baltimore and Ohio Railroad Company," "B&O," "Chessie System" or in some other appropriate manner.

Also enclosed is a draft in the amount of \$10.00 representing the required recording fee.

100 OFFICE OF  
THE SECRETARY  
JAN 15 2 08 PM '85  
MOTOR OPERATING UNIT



The Chessie System Railroads, a unit of CSX Corporation, are the Chesapeake and Ohio Railway, Baltimore and Ohio Railroad, Western Maryland Railway and affiliated lines.

Pursuant to the Commission's rules and regulations for the recordation of certain documents under 49 U.S.C. §11303, as currently administered, you are hereby requested duly to file one of the enclosed counterparts for record in your office and to return the remaining copy to me at my above address.

Sincerely,

A handwritten signature in cursive script, appearing to read "Louis Recher".

Louis Recher  
Assistant General Solicitor

LR:cc  
Encls.

1/15/85

**Interstate Commerce Commission**  
Washington, D.C. 20423

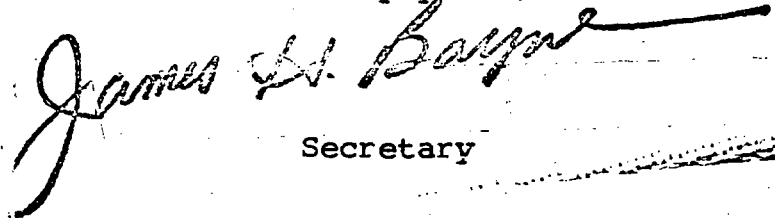
**OFFICE OF THE SECRETARY**

Louis Recher  
Assist General Solicitor  
Chessie System Railroad  
Terminal Tower  
P.O.Box 6419  
Cleveland, Ohio 44101

Dear Sir:

The enclosed document(s) was recorded pursuant to the provisions of Section 11303 of the Interstate Commerce Act, 49 U.S.C. 11303, on 1/15/85 at 2:10pm and assigned re-recording number(s). 14547

Sincerely yours,

  
Secretary

Enclosure(s)

JAN 15 1985 2 10 PM

LEASE AGREEMENT

OF WHICH THIS IS NO. 6

INTERSTATE COMMERCE COMMISSION

This Agreement, made and entered into as of the first day of November, 1984, by and between Fruit Growers Express Company, a Delaware Corporation (hereafter "FGE"), as lessor, and The Chesapeake and Ohio Railway Company, a Virginia Corporation, and The Baltimore and Ohio Railroad Company, a Maryland corporation (hereafter collectively referred to as "LESSEE").

W I T N E S S E T H:

1. Cars. FGE agrees to furnish to LESSEE and LESSEE agrees to accept and use upon the terms and conditions herein set forth 350 RBL type refrigerator cars conforming to AAR car type code R410 (hereafter "Cars"). The specific Cars and interior lading devices contained therein are set forth in Exhibit A hereto to be revised annually. In the event that FGE is unable to supply the number of Cars of each series specified in Exhibit A, then FGE shall substitute like cars.

2. Lease Charges. During the Lease term, the quarterly rental charge per Car shall be \$987.00, payable quarterly in arrears.

Lease charges shall become effective upon the date of "delivery" of each Car to Lessee, as defined in Article 4, and shall continue in effect with respect to each Car until "returned" to FGE, as defined in Article 14 at the end of the Lease term, or as provided in Articles 7 and 13. Payment of Lease charges shall be made within thirty days after receipt of a correct invoice by LESSEE, and shall be directed to FGE at 3220 Duke Street, Alexandria, Virginia 22314. In the event of a dispute over the amount of any invoice submitted by FGE, LESSEE shall pay any undisputed portion of the invoice within thirty days of its receipt. With respect to the remaining portion, any dispute which cannot otherwise be resolved between FGE and LESSEE shall be resolved in accordance with the provisions of Article 21 of this Agreement. The first Lease charge payment for each Car shall be made at the pro rata daily rate for the number of days from the date of delivery to the end of the quarter in which delivery occurs. The last payment of Lease charges per Car shall be based upon the number of days from the first day of the final quarter until the Car is returned at the pro rata daily rate.

3. Termination of Prior Leases; Rehabilitation; Inspection. Any of the Cars subject to a lease heretofore entered into between FGE and LESSEE shall be returned by LESSEE to FGE for rehabilitation as herein-after provided. Rental charges under any such prior lease shall continue to accrue, with respect to any Car, until and including the date any delivering carrier shall give FGE notice that such Car has arrived at a location specified by FGE and is available for delivery to FGE; thereafter, such rental charges shall automatically and immediately abate.

Prior to the return of or delivery of Cars to LESSEE, FGE shall perform rehabilitation on the Cars to upgrade their condition by fulfilling all of the requirements of the Commercial and Mechanical Speci-

fications attached hereto and marked, respectively, Exhibits B and C. Said Specifications are hereby deemed to be supplemented by the "Repair Information" set forth in Exhibit D hereto. Each of the Cars shall be subject to LESSEE'S inspection at FGE's shop(s) at any reasonable times during the performance of such rehabilitation.

4. Delivery. At least two (2) cars shall be made available for delivery to LESSEE by FGE on each business day beginning no later than the last business day of January, 1985. LESSEE shall provide FGE with a Certificate of Inspection at the shop where rehabilitation work is being performed prior to the time the Car leaves that shop for delivery to LESSEE. The Certificate of Inspection shall state that the Car is of the condition, type and contains the equipment required by this Agreement and the applicable Specifications and is fit and suitable for transporting the commodities to be loaded therein. Provision of such Certificate, however, shall in no way relieve FGE of its continuing obligations and responsibilities under this Lease. All Cars shall be delivered by FGE to LESSEE for acceptance hereunder within the Commonwealth of Virginia. If any Cars are rehabilitated outside Virginia, those cars shall be delivered to Lessee for acceptance in Richmond, Virginia; any expenses incurred by FGE in transporting those Cars to Richmond, Virginia for acceptance, as aforesaid, shall be for the account of the Lessee. Each Car shall be deemed to be "delivered" on the date of the first to occur of the following: LESSEE executes a Certificate of Acceptance for such Car substantially in the form attached hereto as Exhibit E, or the Car is placed on Lessee's lines within the Commonwealth of Virginia. Any Car not accepted by LESSEE because such Car does not conform in every respect to the attached Commercial and Mechanical Specifications may be returned to FGE by LESSEE, at LESSEE's option, at FGE's sole risk and expense. LESSEE's acceptance, however, shall in no way relieve FGE of its continuing obligations and responsibilities under this Agreement.

FGE shall not be responsible for any failure to make Cars available for delivery in accordance with the requirements of this Article 4 when that failure is the result of any Federal, state or municipal action, statute, ordinance or regulation; strike or other labor trouble; fire damage to or destruction in whole or in part of merchandise or manufacturing plant; or any other cause, contingency or circumstances within or without the United States not reasonably subject to FGE's control which prevents or hinders its performance of its obligations under this Lease Agreement.

5. Lettering. At the time of delivery each Car shall bear the railroad reporting marks designated by LESSEE. Except for evidencing the operation of the Cars in LESSEE'S service, LESSEE shall not place or permit any lettering or marking of any kind to be placed on the Cars without FGE's prior written consent.

6. Maintenance; Liability. LESSEE will be responsible for the

cost of maintaining the Cars in good condition and repair.

Except to the extent resulting from the wilful or negligent acts or omissions of FGE, its officers, agents or employees, in no event shall FGE be liable for any damage to or loss of the whole or any part of any shipment made in the Cars, nor for damage to any other property (including the Cars), nor for injury to or death of any person, which may in any manner result from the operation or use of the Cars during the term of this Lease.

7. Loss or Destruction. Responsibility for loss or destruction of Cars shall be determined by the contemporaneous AAR Rules of Interchange. Said Rules shall determine the rights, obligations and liabilities of FGE, LESSEE and any railroad moving the Cars over its lines.

Upon receipt by FGE of written notice that a Car has been lost or destroyed, Lease charges for such Car shall thereupon cease.

8. Substitution. In the event any Car is lost, destroyed or damaged beyond repair during the first two years of the initial term of this Agreement FGE, at its election, may, within ninety (90) days from the receipt of written notice from LESSEE of such loss, destruction or damage, substitute another car of approximately the same age, type, condition and capacity or, if such a car is not then available, another car of a type and possessing such other characteristics as shall be mutually agreed upon by the parties hereto. In the event any Car is lost, destroyed or damaged beyond repair at any time after the first two years of the initial term of this Agreement, FGE, at LESSEE's election, shall within ninety (90) days from the receipt of written demand from LESSEE, substitute another car of approximately the same age, type, condition and capacity or, if such a car is not then available, another car of a type and possessing such other characteristics as shall be mutually agreed upon by the parties hereto. The Lease charge for any replacement car shall be the same as the Lease charge for the lost, destroyed or damaged Car, and said Lease charge shall commence on the date of "delivery" in accordance with Article 4 hereof.

9. Taxes. LESSEE shall file all applicable property tax reports on Cars subject to this Agreement and pay all property taxes levied thereon. LESSEE shall furnish FGE exemption certificates or direct pay permits applicable to state and local sales and use taxes.

10. Freight and Other Charges. FGE shall not be responsible for any freight, switching, demurrage, tariff, fines or other charges made by any railroad or governmental agency in respect of any of the Cars, except pursuant to Articles 4 and 13 hereof.

11. Title. LESSEE agrees that it does not obtain by performance under this Agreement any title to the Cars nor any property right or

interest legal or equitable therein, except solely as LESSEE hereunder and subject to all terms hereunder. LESSEE shall keep the Cars free from any encumbrances or liens resulting from acts or omissions of LESSEE which may be a cloud upon or otherwise affect FGE's title.

12. Assignment. LESSEE agrees to make no transfer or assignment of this Agreement or of the Cars by operation of law or otherwise without FGE's prior written consent. However, LESSEE may sublease any of the Cars for use in the continental United States or in international service between Canada and the United States without securing the prior written consent of FGE. Such subleasing shall not relieve LESSEE from any of its obligations under this Agreement.

13. Equipment Trusts; Quiet Enjoyment. The rights of the parties hereunder are expressly subject to the rights granted the Trustees under any applicable Equipment Trust Agreements covering the initial acquisition of Cars subject to this Agreement. In the event of default under said Equipment Trusts, the Trustees or their agents may, in a reasonable manner, enter upon the premises wherein the Cars may be situated and retake and withdraw said Cars from said premises. FGE and/or the Trustees shall at any reasonable time have the right to inspect any or all of the Cars upon reasonable notice. Subject to the foregoing, and so long as LESSEE is not in default hereunder, FGE covenants that LESSEE shall have and enjoy the quiet and peaceful use and possession of the Cars during the term of this Agreement. In the event this covenant is breached by FGE, LESSEE may, at its option, terminate this Agreement with respect to the Car or Cars of which LESSEE has been deprived the quiet and peaceful use and possession and thereupon return such Cars to FGE at the latter's sole risk and expense. Cars so returned need not be cleaned of residue if such Cars are located off LESSEE's lines at the time LESSEE is so deprived thereof or, if such Cars are located on LESSEE's lines, the Cars are not made available to LESSEE for cleaning at or after the time LESSEE is so deprived thereof. Upon receipt by FGE of written notice that Lessee is terminating this Agreement as to any of the Cars, as aforesaid, Lease charges for such Cars shall thereupon cease.

14. Return. Upon the expiration of this Agreement, the Cars shall be "returned," at LESSEE'S expense, to FGE at such point(s) as may be mutually agreed upon, empty and free from residue and Contamination Damage (as defined in the contemporaneous AAR Rules of Interchange) and in the condition described in Exhibit G hereto. Any Car shall be deemed "returned" to FGE as of the date such Car is jointly inspected by representatives of the parties hereto, irrespective of the results of such inspection. Rental charges for such Car shall continue to accrue until and including the date LESSEE gives FGE written notice that such Car is available for such joint inspection at a location where ten (10) or more Cars have been made available for such joint inspection. If one (1) or more but fewer than ten (10) Cars shall be

made available for such joint inspection at any one location, rental charges shall continue to accrue with respect to each such Car for fifteen (15) days from the date Lessee gives FGE written notice that such Car is available for joint inspection, as aforesaid, or until Lessee gives FGE written notice that ten (10) or more Cars have been made available for joint inspection at that same location. Thereafter such rental charges shall automatically and immediately abate. LESSEE shall reimburse FGE for the cost of repairing any Cars in damaged condition, to the extent FGE is not responsible for such damage pursuant to Article 6 hereof, and for cleaning any Cars that contain residue. LESSEE assumes responsibility for the full undepreciated cost of the lading devices with which any of the Cars is equipped (based upon the original date of installation of such devices in each Car and not upon the date such devices are rehabilitated, if at all, pursuant to Article 3 hereof); upon return of Cars at the termination of this Agreement, if no other railroad is willing to lease said Cars and assume responsibility for the said remaining undepreciated cost of the lading devices, LESSEE agrees to pay FGE a sum equal to such cost within thirty (30) days of LESSEE'S receipt of a correct invoice therefor. The undepreciated costs of the lading devices, as of the expiration date(s) of this Lease, are set forth in Exhibit F hereto.

15. Remedies. Should LESSEE default in the payment of Lease charges or breach any of the covenants, stipulations or conditions herein and such default or breach shall continue for twenty (20) days after LESSEE'S receipt of a written demand from FGE to remedy such default or breach, then FGE at its option by written notice to LESSEE may declare a termination of this Agreement and of all the rights of the LESSEE hereunder. FGE may waive its rights under this Agreement, but no such waiver shall extend to or affect any subsequent default or breach by LESSEE. The rights and remedies herein given to FGE shall in no way limit its other rights and remedies given or provided by law or in equity.

16. Term. The initial term of this Agreement as to all Cars listed on Exhibit A shall continue for five (5) years from the first day of the month consecutively following the month in which falls the average date of delivery of all the Cars and shall automatically be extended for a second five (5) year term unless either party hereto shall serve on the other thirty (30) days' written notice prior to the end of the initial term of its desire to terminate the Agreement.

17. Notices. Any notice required or permitted hereunder shall be deemed delivered when deposited postage pre-paid in the U.S. mail, certified or registered, return receipt requested, and addressed as follows:

If to FGE, at:

3220 Duke Street



Alexandria, Virginia 22314

Attn.: John E. Chapman  
Vice President - Marketing and Sales

If to LESSEE, at:

100 N. Charles Street  
Baltimore, Maryland 21201

Attn: Senior Manager Equipment Utilization - S.C. 124

or at such other address as may be designed in writing by a party hereto.

18. Counterparts; Captions. This Agreement may be executed in any number of counterparts, each of which shall be deemed for all purposes as an original, but all of which shall constitute one and the same instrument. The captions in this Agreement are for convenience only and shall not define or limit any of the terms hereof.

19. Governing Law; Enforceability. This Agreement and all amendments hereto shall be governed by and construed in accordance with the laws of the State of Maryland. Any provision of this Agreement which is unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such unenforceability without invalidating the remaining provisions hereof.

20. Amendments. No amendment to this Agreement shall be binding upon either party hereto unless both parties shall have executed said amendment in the same manner that this Agreement is executed.

21. Arbitration. Any controversy or claim arising out of or relating to this Lease Agreement, or the breach thereof, shall be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the Arbitrator(s) may be entered in any Court having jurisdiction thereof.

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

FRUIT GROWERS EXPRESS COMPANY

**ATTEST:**

ATTEST:  
*Charles A. Lintner*  
(Seal)

By J. E. Chapman  
Vice President - Marketing and Sales

ATTEST:

*Patricia J. Shady*  
Corporate Secretary  
(Seal)

THE CHESAPEAKE AND OHIO RAILWAY  
COMPANY

By *A. B. Apton*  
Treasurer

ATTEST:

*Patricia J. Shady*  
Corporate Secretary  
(Seal)

THE BALTIMORE AND OHIO RAILROAD  
COMPANY

By *A. B. Apton*  
Treasurer

COMMONWEALTH OF VIRGINIA

)

)

ss:

)

CITY OF ALEXANDRIA

On this 5<sup>th</sup> day of November, 1984, before me personally appeared JOHN E. CHAPMAN, to me personally known who, being by me duly sworn, says that he is Vice President - Marketing and Sales of FRUIT GROWERS EXPRESS COMPANY, that one of the seals affixed to the foregoing instrument is the corporate seal of said corporation, that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and he acknowledged that the execution of the foregoing instrument was the free act and deed of said corporation.

*Jesse F. Heflin*

Notary Public

My Commission Expires: 2/2/88

(Notarial Seal)

STATE OF MARYLAND

)

)

ss.

)

CITY OF BALTIMORE

On this 6<sup>th</sup> day of November, 1984, before me personally appeared A. B. Aftoora, to me personally known who, being by me duly sworn, says that he is Treasurer of THE CHESAPEAKE AND OHIO RAILWAY COMPANY, that one of the seals affixed to the foregoing instrument is the corporate seal of said corporation, that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and he acknowledged that the execution of the foregoing instrument was the free act and deed of said corporation.

*Beatrice M. McCauley*

Notary Public

My Commission Expires: 2-1-86

(Notarial Seal)

STATE OF MARYLAND

)

) ss.

CITY OF BALTIMORE

)

On this 6th day of November, 1984, before me personally appeared A. B. Aftoora, to me personally known who, being by me duly sworn, says that he is Treasurer of THE BALTIMORE AND OHIO RAILROAD COMPANY, that one of the seals affixed to the foregoing instrument is the corporate seal of said corporation, that said instrument was signed and sealed on behalf of said corporation by authority of its Board of Directors, and he acknowledged that the execution of the foregoing instrument was the free act and deed of said corporation.

Beulah M. McCauley

Notary Public

My Commission Expires: 2-1-86

## Description of Cars as Originally Constructed

### 50-ft., 70-ton RBL Cars

Series B&O 894221-894320 (50 cars)  
Series C&O 894321-894420 (18 cars)

#### 1. General Dimensions of Cars

Length over striking plates - - - - -	55'8½"
Length inside between end linings - - - - -	50'6"
Length center to center of trucks - - - - -	41'4-¾"
Width over side sill channels - - - - -	9'9-¾"
Width inside between linings - - - - -	9'2-5/16"
(side fillers against side wall)	
Width over side plates - - - - -	10'0"
Width over eaves - - - - -	9'9-1/4"
Width extreme - - - - -	10'6"
Width door openings - clear - - - - -	12'6"
Height rail to center plate - - - - -	2'1-¾"
Height floor to ceiling - - - - -	10'6-5/16"
Height rail to eaves - - - - -	14'8-5/8"
Height top of rail to top of seam caps - - - - -	15'2-7/32"
Height door openings - clear - - - - -	9'11½"
Height top of rail to top of car floor - - - - -	3'11-13/16"
Capacity, loading space, cubic ft. - - - - -	4886
Truck wheel base - - - - -	5'8"

#### 2. Description

The car is a 70-ton capacity Class "A" riveted steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-riveted steel superstructure, steel ends, rigid riveted steel roof and sliding plug doors, offset 64" to the left.

#### 3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

#### 4. Loading Devices

Equipco one-piece gates with necessary keepers in floor and ceiling.

Description of Cars as Originally Constructed

50-ft., 70-ton RBL Cars

Series B&O 896230-896326 (95 cars)

Series C&O 896331-896377 (47 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	55'8½"
Length inside between end linings - - - - -	50'6"
Length center to center of trucks - - - - -	41'4-3/8"
Width over side sill channels - - - - -	9'9-3/4"
Width inside between linings - - - - -	9'2"
(side fillers against side wall)	
Width over side plates - - - - -	10'0"
Width over eaves - - - - -	9'9½"
Width extreme - - - - -	10'6"
Width door openings - clear - - - - -	12'6"
Height rail to center plate - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'6-5/16"
Height rail to eaves - - - - -	14'8-5/8"
Height top of rail to top of seam caps - - - - -	15'2-7/32"
Height door openings - clear - - - - -	9'11½"
Height top of rail to top of car floor - - - - -	3'11-13/16"
Capacity, loading space, cubic ft. - - - - -	4873
Truck wheel base - - - - -	5'8"

2. Description

The car is a 70-ton capacity Class "A" riveted steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-riveted steel superstructure, steel ends, rigid riveted steel roof and sliding plug gear operated doors, offset 64" to the left.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

Equipco one-piece gates with necessary keepers in floor and ceiling. Load dividers meet latest AAR design requirements.

Description of Cars as Originally Constructed

50-ft., 100-ton RBL Cars

Series C&O 897535-897559 (25 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	57'10"
Length inside between end linings - - - - -	52'7"
Length center to center of trucks - - - - -	42'3-3/4"
Length over pulling face of couplers - - - - -	60'5 1/2"
Width over side sill channels - - - - -	9'11-3/4"
Width inside between linings - - - - -	9'5-3/8"
(side fillers against side wall)	
Width over side plates - - - - -	10'2"
Width over eaves - - - - -	9'8-5/8"
Width extreme - - - - -	10'7"
Width door openings - clear - - - - -	10'6"
Height rail to center plates - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'5"
Height rail to eaves - - - - -	14'9-1/16"
Height top of rail to top of seam caps - - - - -	15'2-15/32"
Height door openings - clear - - - - -	10'0"
Height top of rail to top of car floor - - - - -	4'0-7/8"
Capacity, loading space, cubic ft. - - - - -	5175
Truck wheel base - - - - -	5'10"

2. Description

The car is a 100-ton capacity Class "A" welded steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-riveted steel superstructure, steel ends, rigid riveted steel roof and gear operated sliding plug doors.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

Evans Air-Pak load dividers without floater panels and air bags, and necessary keepers in floor and ceiling of car. Design meets latest AAR requirements.

Description of Cars as Originally Constructed

50-ft., 70-ton RBL Cars

Series B&O 897814-897857 (43 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	56'7-7/8"
Length inside between end linings - - - - -	51'4-7/8"
Length center to center of trucks - - - - -	42'3-3/4"
Length over pulling face of couplers - - - - -	59'3-3/8"
Width over side sill channels - - - - -	9'11-3/4"
Width inside between linings - - - - -	9'5-3/8"
Width over side plates - - - - -	10'2"
Width over eaves - - - - -	9'8-5/8"
Width extreme - - - - -	10'7"
Width door openings - clear - - - - -	10'6"
Height rail to center plates - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'5"
Height rail to eaves - - - - -	14'9"
Height top of rail to top of seam caps - - - - -	15'2-13/32"
Height door openings - clear - - - - -	10'0"
Height top of rail to top of car floor - - - - -	4'0-13/16"
Capacity, loading space, cubic ft. - - - - -	5059
Truck wheel base - - - - -	5'8"

2. Description

The car is a 70-ton capacity Class "A" welded steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-riveted steel superstructure, steel ends, rigid riveted steel roof and gear operated sliding plug doors.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

897814-897857

Evans Products Company dual Air-Pak load dividers, consisting of two main gates containing one floater panel each with necessary keepers in floor and ceiling. Design meets latest AAR requirements.



Description of Cars as Originally Constructed

50-ft., 70-ton RBL Cars

Series B&O 897428-897459 (30 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	55'9"
Length inside between end linings - - - - -	50'6"
Length center to center of trucks - - - - -	41'4-7/8"
Length over pulling face of couplers - - - - -	58'4 1/2"
Width over side sill channels - - - - -	9'11-3/4"
Width inside between linings - - - - -	9'5-3/8"
Width over side plates - - - - -	10'2"
Width over eaves - - - - -	9'8-5/8"
Width extreme - - - - -	10'7"
Width door openings - clear - - - - -	10'6"
Height rail to center plates - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'5"
Height rail to eaves - - - - -	14'9"
Height top of rail to top of seam caps - - - - -	15'2-13/32"
Height door openings - clear - - - - -	10'0"
Height top of rail to top of car floor - - - - -	4'0-13/16"
Capacity, loading space, cubic ft. - - - - -	4970
Truck wheel base - - - - -	5'8"

2. Description

The car is a 70-ton capacity Class "A" welded steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-riveted steel superstructure, steel ends, rigid riveted steel roof and gear operated sliding plug doors.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

Evans Products Company dual Air-Pak load dividers, consisting of two main gates containing one floater panel each with necessary keepers in floor and ceiling. Design meets latest AAR requirements.

Description of Cars as Originally Constructed

50-ft., 70-ton RBL Cars

Series B&O 897531-897534 (4 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	55'8½"
Length inside between end linings - - - - -	50'6"
Length center to center of trucks - - - - -	41'4-3/8"
Length over pulling face of couplers - - - - -	58'4"
Width over side sill channels - - - - -	9'9-3/4"
Width inside between linings - - - - -	9'4"
Width over side plates - - - - -	9'11"
Width over eaves - - - - -	9'9½"
Width extreme - - - - -	10'6"
Width door openings - clear - - - - -	10'6"
Height rail to center plates - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'6-5/16"
Height rail to eaves - - - - -	14'8-5/8"
Height top of rail to top of seam caps - - - - -	15'2-7/32"
Height door openings - clear - - - - -	9'11½"
Height top of rail to top of car floor - - - - -	3'11-13/16"
Capacity, loading space, cubic ft. - - - - -	4961
Truck wheel base - - - - -	5'8"

2. Description

The car is a 70-ton capacity Class "A" welded steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-welded steel superstructure, riveted steel ends, rigid riveted steel roof and gear operated sliding plug doors.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

Evans Products Company dual Air-Pak load dividers, with necessary keepers in floor and ceiling. Design meets latest AAR requirements.

Description of Cars as Originally Constructed

50-ft., 70-ton RBL Cars

Series FGER 97460-97530 (38 cars)

1. General Dimensions of Cars

Length over striking plates - - - - -	55'8½"
Length inside between end linings - - - - -	50'6"
Length center to center of trucks - - - - -	41'4-3/8"
Length over pulling face of couplers - - - - -	58'4"
Width over side sill channels - - - - -	9'9-3/4"
Width inside between linings - - - - -	9'4"
Width over side plates - - - - -	9'11"
Width over eaves - - - - -	9'9½"
Width extreme - - - - -	10'6"
Width door openings - clear - - - - -	10'6"
Height rail to center plates - - - - -	2'1-3/4"
Height floor to ceiling - - - - -	10'6-5/16"
Height rail to eaves - - - - -	14'8-5/8"
Height top of rail to top of seam caps - - - - -	15'2-7/32"
Height door openings - clear - - - - -	9'11½"
Height top of rail to top of car floor - - - - -	3'11-13/16"
Capacity, loading space, cubic ft. - - - - -	4961
Truck wheel base - - - - -	5'8"

2. Description

The car is a 70-ton capacity Class "A" welded steel 20" travel hydraulic cushion underframe RBL refrigerator car with all-welded steel superstructure, riveted steel ends, rigid riveted steel roof and gear operated sliding plug doors.

3. Clearance

Limiting dimensions conform to AAR Manual Plate "C" Equipment diagram unrestricted for Interchange service.

4. Loading Devices

Evans Products Company dual Air-Pak load dividers, with necessary keepers in floor and ceiling. Design meets latest AAR requirements.

COMMERCIAL SPECIFICATIONS #CS 84-IBC - FINAL 10/22/84350 INSULATED BOX CARS

- 1.0 GENERAL: These specifications describe 350 used Insulated Box Cars to be furnished through lease. Cars are to conform to AAR Car Type Code R410. Cars must be reconditioned in accordance with lessee's specifications and must be fully acceptable for unlimited interchange in U.S. and Canada. Wherever dimensions, weights or capacities are called for anywhere in these specifications, bidder must state specific number applicable to cars in this proposal. If specific number is not stated, the minimum will be assumed except for LT WT. Where numbers vary between cars (e.g. as Load Limit may vary), range from maximum to minimum, or vice versa, is acceptable.

1.1 Key Weights and Dimensions:

<u>Item</u>	<u>Nominal</u>	<u>Plus</u>	<u>Minus</u>
INSIDE LENGTH	50'6"	2'1"	0
INSIDE WIDTH	9'4"	3"	0
INSIDE HEIGHT	10'5"	Anything	0
DOOR WIDTH	10'6"	2'0"	0
DOOR HEIGHT	9'11"	Anything	0
LOAD LIMIT (70-ton cars)	135,000 LB	Anything	0
LOAD LIMIT (100-ton cars)	170,000 LB	Anything	0
LT. WGT. (70-ton trucks)	85,000 LB	0	Anything
LT. WGT. (100-ton trucks)	93,000 LB	0	Anything
FLOOR CAPACITY	25 K*	Anything	0

\* Where "K" stands for 1,000 LB

- 1.2 Clearance: Plate C is preferred. Plates B and E are acceptable. Cars exceeding Plate E are not acceptable. Bidder must state Plate to which cars conform in his proposal; if Plate is not stated, Plate B will be assumed.

1.3 Key Features: Cars are to be equipped as follows:

- 1.3.1 Cushioning: Center-of-car type with minimum 20" travel
- 1.3.2 Insulation: Type and condition of insulation and gaskets must provide "U" factor not to exceed 300.
- 1.3.3 Heater Brackets: Minimum of eight brackets are to be attached to ceiling to suspend two heaters in doorway area under galvanized metal plates minimum 16"x24" each to protect ceiling.
- 1.3.4 Bulkheads: Total of 350 cars will be composed of three groups of cars as follows:

<u>Car Capacity</u>	<u>Type of Bulkhead</u>	<u>#Car Sets</u>
100-Ton	Two self-locking single-piece bulkheads	25
70-Ton	Two self-locking single-piece bulkheads with single expanding pneumatic face on each	115
70-Ton	Two self-locking single-piece bulkheads	210

1.3.5 Scuff Liner: To be applied to entire length of interior of sides, ends and doors to height of 24" above floor. To avoid hang-up on horizontal ledge, scuff plate is to be tapered on top to angle of 60 degrees with the horizontal to less than half thickness at any point along top edge. Type material to be applied is 3/16" Kemlite or equivalent with the following minimum characteristics:

Tensile strength	10,000 psi
Flexural strength	20,000 psi

1.3.6 Exterior: Entire exterior of car is to be re-painted yellow with black stencilling meeting AAR requirements as further described in Item 28 of Mechanical Specs entitled "Specification for Leased RBL Cars".

1.3.7 Trucks: Must be equipped with roller bearings and have D-5 springs.

1.4 Replacement Items: All items replaced must be of quality at least equal to original equipment on the car. All lumber replacements in doors, side walls, end walls, floors and ceilings must be of same thickness as the section replaced.

## 2.0 SIDE WALLS:

2.1 Side Fillers: Remove any side fillers and replace with solid wall, either tongue-&-groove or exterior grade finished plywood.

2.2 Repairs: The following are to be made:

2.2.1 Metal patches above 24" must be removed and replaced by new flush section of lining (tongue-and-groove or plywood). Plywood replacement may be either entire sheet or section between mid-points of adjacent nailing posts, whichever is more economical.

2.2.2 Metal patches on bottom 24" may be left in place where they (1) will be completely covered by scuff plate, and (2) have sufficient wood back-up to support scuff liner against tyne damage. If any one dimension of break in wood under patch exceeds 6", or any two dimensions exceed 3" each, opening must be filled with new wood insert installed flush with surface of existing lining that faces inside of car.

- 2.2.3 Replace broken or rotted boards plus any in bottom 24" that do not provide adequate support for scuff lining. Replace any boards or sections above 24" that have gouges which expose the insulation.
- 2.2.4 Finished job must be thoroughly cleaned (light sanded if necessary) to provide clean appearance and not contain any slivers, ledges or other projections that could tear paper bags.

2.3 Scuff Liner: Apply to entire length of each side wall per Item 1.3.5.

### 3.0 ENDS:

3.1 Repairs: The following are to be made:

- 3.1.1 Metal patches above 24" must be removed and replaced by new flush section of lining. Plywood replacement may be either entire sheet or section between mid-points of adjacent nailing posts, whichever is more economical.
- 3.1.2 Metal patches on bottom 24" may be left in place where they (1) will be completely covered by scuff plate, and (2) have sufficient wood back-up to support scuff liner against tyne damage. If any one dimension of break in wood under patch exceeds 6", or any two dimensions exceed 3" each, opening must be filled with new wood insert installed flush with surface of existing lining that faces inside of car.
- 3.1.3 Replace broken or rotted boards plus any in bottom 24" that do not provide adequate support for scuff lining. Replace any boards or sections above 24" that have gouges which expose the insulation.
- 3.1.4 Finished job must be thoroughly cleaned (light sanded if necessary) to provide clean appearance and not contain any slivers, ledges or other projections that could tear paper bags.

3.2 Scuff Liner: Apply across entire width of each End per Item 1.3.5.

### 4.0 FLOORS:

4.1 Floors: Are to be thoroughly cleaned, then sanded to present continuous clean-wood appearance and to remove slivers, ledges and other projections that could tear paper bags. Broken or rotted sections, and areas with gouges deep enough or wide enough to reduce floor capacity below 25K, must be replaced with new hard wood flooring of same thickness as existing floor.

### 5.0 CEILING:

5.1 Bulges: Sand off any bulges that foul bulkheads in any position of future travel sufficiently (1) to remove any existing rub marks and (2) to provide sufficient future clearance between bulkhead and ceiling to avoid fouling under all weather conditions.

5.2 Ceiling Patches: Replace or patch (with scuff liner or galvanized steel) any breaks deep enough to expose insulation or jagged enough to permit infestation or contamination. Metal patches on ceiling may be left in place if fitted tightly enough to surrounding wood to preclude infestation. New patches may be galvanized steel, aluminum or plastic. Type of patching planned must be stated by bidder; if type patching is not stated, galvanized steel will be assumed.

## 6.0 DOORS:

6.1 Operation: Insure that Third-Arm Safety Hangers are applied and in good condition. Straighten or replace any distorted parts so doors can be opened or closed by one average man. Lubricate completely per AAR Lubrication Manual. Replace all gaskets. Straighten any bent levers.

6.2 Repairs: The following are to be made:

- 6.2.1 Replace any lining sections that are bulged sufficiently to interfere with opening or closing door or that foul bulkhead in any position of travel. Shave swollen foam so that replacement section will retain flat flush surface.
- 6.2.2 Small bulges that do not interfere with door operation or foul bulkheads may be left but must be sanded off to provide sufficient clearance to avoid fouling bulkhead or car exterior under all weather conditions.
- 6.2.3 Metal patches above 24" must be removed and replaced by new flush section of lining. Plywood replacement may be either entire sheet or section between mid-points of adjacent nailing posts, whichever is more economical.
- 6.2.4 Metal patches on bottom 24" may be left in place where they (1) will be completely covered by scuff plate, and (2) have sufficient wood back-up to support scuff liner against tyne damage. If any one dimension of break in wood under patch exceeds 6", or any two dimensions exceed 3" each, opening must be filled with new wood insert installed flush with surface of existing lining that faces inside of car.
- 6.2.5 Replace broken or rotted boards plus any in bottom 24" that do not provide adequate support for scuff lining. Replace any boards or sections above 24" that have gouges which expose the insulation.
- 6.2.6 Finished job must be thoroughly cleaned (light sanded if necessary) to provide clean appearance and not contain any splinters, ledges or other projections that could tear paper bags.

6.3 Scuff Liner: Apply to entire width of door per Item 1.3.5.

## 7.0 BULKHEAD SYSTEM:

7.1 Self-Locking: All bulkheads must be self-locking and include pry bar openings to aid in releasing bottom locking pins.

7.2 Capacity: Bulkheads must meet current AAR requirements as follows:

Car Capacity	Allowable Load Per Bulkhead		
	Evenly Distributed	Lower Half	Bottom 12"
70-Ton	95,000 lb	76,000 lb	57,000 lb
100-Ton	110,000 lb	88,000 lb	66,000 lb

7.3 Operation: Completely refurbish, including carriages and inching chains, so bulkhead can be started and moved by one average man. Grind off any ledges, projections, weld spatter, rust and paint on crane rails so that there is no interference with free movement of rollers. Crane rails must be straight within 1/8" in 36" throughout entire length of bulkhead travel. Grooves up to 1/16" deep are to be ground smooth and blended into adjoining surfaces for a minimum distance of 12" on each side of groove. Grooves 1/16" to 1/8" may be corrected by replacing grooved section, or by filling with weld metal and grinding resultant weld smooth and flush with adjoining area. Wherever grooves are corrected by filling and grinding, ground surface must be blended in over a minimum distance of 18". If grooves are deeper than 1/8", section must be replaced. Examine bulkhead faces and grind off any sharp projections. Lubricate bulkhead system per manufacturer's instructions.

7.4 Track Lengths: Crane rails and floor tracks must be minimum of 30 ft. long, or extend between first side post beyond door post on A-End to first side post beyond door post on B-End, whichever is greater. Stops must be applied to crane rails to contain bulkhead within designated limits of travel.

7.5 Track Types: Floor tracks must be "cleanable" type, open continuously along working length for brushing out or scraping out. Tops of teeth must be flush with floor down to maximum of 1/8" below floor. Plugged drains are to be included. Where covered track is replaced, old track need not be replaced beyond first side post on each end, but must be thoroughly cleaned out to permit car to handle packaged food products with all holes in top plate covered over or top plate replaced with solid piece.

7.6 Rollers: All weight-bearing rotating surfaces are to be carefully inspected and replaced if any flat spots can be detected. Flat spots up to 1/4" across are acceptable on non-weight-bearing rotating surfaces (e.g. sprockets) that do not support bulkhead weight but only serve to keep bulkhead in line.

7.7 Locking System: Inspect locking handle and locking arm operating linkage and straighten if bent. Replace all broken pins and those with grooves or wear points deeper than 1/8". Insure that all pins (upper and lower) have minimum penetration at least equal to manufacturer's standards.



- 7.8 Alignment Guide: To assist in checking to see that bulkhead is aligned properly across the car, bright red arrows are to be painted along each side of ceiling. The first pair of such arrows is to point toward the first pair of crane rail locking holes in the B-End of the car. Additional arrows are to be painted at every 5th pair of opposite holes for the entire working length of the crane rails. Each arrow is to be minimum 1" wide and 6" long. Point of arrow is to come within 1" of adjacent crane rail.
- 7.9 Safety Features: Insure that bulkheads have sound safety features to prevent (1) carriage disengaging from crane rails, and (2) bulkhead disengaging from carriage.

8.0 CAR CLASSIFICATION:

- 8.1 AAR Mechanical Designation: RBL
- 8.2 AAR Car Type Code: R410
- 8.3 Reporting Marks: CO (128 cars) and BO (222 cars).
- 8.4 Stencilling: Standard AAR Stencilling is to be applied.
- 8.5 Car Numbers: A-1 cars are to be numbered in series to be designated by Lessee prior to start of rehabilitation programs.

NOTE 1: Wherever plywood is called for, it is to be exterior grade sanded to smooth finish.

NOTE 2: If any questions on above Specifications occur prior to submission of bids, call G. J. Weihofen at (301) 237-2118.

MECHANICAL  
SPECIFICATIONS

FOR

LEASED RBL CARS

1. DESCRIPTION:

Cars are to be built after January 1, 1967 and in accordance with AAR Specifications for the Design, Fabrication and construction of Freight Cars. Maintenance is to be performed as outlined throughout this specification.

2. MAINTENANCE:

All cars are to be jacked, trucks will be removed and completely disassembled for inspection and repair as follows:

- a. New springs and friction castings for the A-3 ride control, S-2-C stabilized trucks to be applied one-hundred percent.
- b. New roller bearing adaptors to be applied one-hundred percent.
- c. Springs are to be gauged to AAR Interchange Requirements as outlined in Rule 50, Paragraph E.

	<u>SPRING CLASS</u>	<u>NOMINAL FREE HEIGHT</u>	<u>SCRAP HEIGHT</u>
1.	D-5 Outer	10-1/4"	9-7/8"
2.	D-5 Inner	10-5/16"	9-7/8"
3.	D-6 Inner	9-15/16"	9-1/2"

3. ROLLER BEARINGS:

Roller bearings are to be inspected and replaced per AAR Interchange Rule 36, Paragraph 10, and lubricated per AAR Interchange Rule 26 and Lubrication Procedure (copy attached) so that new lubed dates are applied to all cars.

4. AXLES:

Axles are to be inspected per AAR Interchange Rule 43. Reclamation of axles must be in accordance with the AAR Wheel & Axle Manual.

5. WHEELS:

All wheels are to be inspected per AAR Interchange Rule 41. Wheels are to be replaced when within AAR limits using reasonable judgment.

6. BRAKE BEAMS:

Brake beams are to be inspected and replaced per AAR Interchange Rule 6.

7. BRAKE LEVERS, GUIDES, AND BRAKE CONNECTION RODS:

To be inspected and replaced per AAR Interchange Rule 11.

8. BRAKE SHOES:

Brake shoes are to be inspected and replaced per AAR Interchange Rule 12 with the following exceptions:

- a. Composition Shoe: Change at 5/8" thick and under.
- b. Cast Iron: Change at 3/4" thick and under.

# **RULE 26 — PERIODIC LUBRICATION ROLLER BEARINGS**

# **RULE 26**

## **A. Cause For Attention**

### **1. GREASE LUBRICATED**

#### **a. OVER DATE:**

- (1) End caps that rotate:  
(Applies only to bearings equipped with a lubricant fitting.)
  - (a) After expiration of 108 months (9 years).
  - (b) After expiration of 107 months when car is on repair track or in transportation yards.
  - (c) Wheels changed and lubrication date is 96 months (8 years) or over — lubricate only bearings not changed.
  - (d) After expiration of test lubrication period specified in stencil of AAR waiver of Rule 26.
- (2) Housing end covers that do not rotate:
  - (a) After expiration of 18 months.
  - (b) After expiration of 17 months when car is on repair track or in transportation yards.
  - (c) Wheels changed and lubrication date is 12 months or over — lubricate only bearings not changed.
- (3) Bearings not requiring field lubrication
  - (a) Do not lubricate bearings which are not equipped with a lubricant fitting. If end cap has a plastic or metal plug, do not attempt to remove plug.

#### **b. Stenciling missing, incorrect or indistinct.**

- c. Where all wheels are changed in both trucks and car is not due for periodic attention — restencil per Section B but do not add grease.
- d. Rotating and non-rotating end caps on same car — At expiration of 18 months, except rotating end cap bearings should be lubricated only when end cap has a lubricant fitting.
- e. When cars which are under authorized test for lubrication period, are given attention at expiration of such period and test stenciling must be removed. See Section B for amount of grease to be added.

#### **f. Cars Equipped with Bearings Not Requiring Lubrication.**

- (1) When all wheel sets on car are equipped with bearings which do not require lubrication, stencil per Section B, Rule 80, except:
  - (a) In the consolidated stencil, on line where month and year of lubrication are shown, stencil "NO" only.
  - (b) Leave the Company and Location blank.
- (2) When wheel set on car with bearings not requiring lubrication is changed out and replaced with wheel set having bearings which do require lubrication, remove stencil shown above and stencil per Section B, Rule 80.
- (3) When wheel set on car with bearings requiring lubrication is changed out and replaced with wheel set having bearings which do not require lubrication, no change in stencil is required unless all wheel sets under car do not require lubrication, then remove or blank out all in formation under "LUB" and stencil "NO" in the area where month-year had been.

- (4) Bearings requiring lubrication and bearings not requiring lubrication on same car — at expiration of period specified for bearings on car which require lubrication.

2. Expiration of time limits is defined as being after the expiration of the period specified in A.1.a. from the month and year stenciled on the car under "LUB".

## **B. Correct Repairs**

TYPE	Size	Amount of Lubricant Required	Remarks
Grease. Rotating. Housing End Caps	11" or less	8 oz.	Applicable codes will be found for 4, 6 and 8 wheel trucks in Section F.
	12"	12 oz.	
Grease. Non-Rotating Housing End Caps	Any size	1 lb.	
Grease. Rotating and Non-Rotating Housing End Caps on Same Car	Any size	Add amount specified for type of bearing.	
Grease. Rotating Housing End Caps Under Test	11" or less	8 oz.	Remove test stenciling and replace with standard stenciling.
	12"	12 oz.	
Grease. Bearings Not Requiring Lubrication.	Any size	None	Do not lubricate.

1. Work referred to in this rule may be performed on shop track or in transportation yards.
2. All work performed must be in accordance with the mandatory requirements of the AAR Lubrication Manual.
3. A pressure gun properly calibrated in ounces by weight must be used in lubrication of grease roller bearings.
4. Scrape off old stenciling and paint over with quick-drying paint.
5. Consolidated stencil as shown in Section B, Rule 80, must be applied and/or maintained on BL and AR side corners of car.
6. If bearing is equipped with a grease fitting, clean and test the grease fitting to insure it has not been damaged.
7. Stenciling per paragraph 5 to include the following:
  - a. Show symbol for lubrication "LUB"
  - b. Month and year of lubrication. For bearings not requiring lubrication see Section A.1.f.
  - c. Show railroad or private line reporting marks performing work.
  - d. Show shop or location where LUB is performed.

**NOTE: LUBRICATION DATE ON CAR WHEN IT ARRIVES AT SHOP MUST BE CHALKED ON WHEELS AS TRUCKS ARE REMOVED FROM CAR.....**

**ALL ROLLER BEARINGS REQUIRING LUBRICATION (equipped with grease fittings) WILL BE LUBRICATED WHEN REMOVED FROM TRUCKS. MAXIMUM LUBRICATION PERMITTED PER BEARING LISTED ABOVE. TO INSURE THAT OVER LUBRICATION WILL NOT OCCUR IT IS NECESSARY TO PRORATE LUBRICATION VOLUME FROM LUBE DATE ON CAR. LUBRICATION WILL BE APPLIED AT THE RATE OF ONE (1) OUNCE PER FULL YEAR FROM LUBE DATE ON CAR TO PRESENT TIME. EXAMPLE: CAR LUBE DATE: 11/77 CURRENT DATE 3/82. SOLUTION: 11/77 TO 3/82 IS 4 YEARS, 4 MONTHS; BECAUSE ONE (1) OUNCE IS REQUIRED PER FULL YEAR, APPLY FOUR (4) OUNCES OF GREASE.**

9. SIDE BEARING CAGE:

If side bearing cages are loose and riveted to bolsters, rivets are to be removed and replaced with high strength bolts and lock nuts. If side bearing cages are loose and bolted to bolsters, nuts are to be tightened as required.

10. BODY SIDE BEARING WEAR PLATES:

Body side bearing wear plates are to be inspected and replaced if side bearing or wear plate is deformed, bent, or worn in excess of 1/4"

11. CENTER PLATE SHIMS:

The clearance between the surface of truck bolster rim and center base plate horizontal surface must not be less than 1/8". This condition, if found, is to be corrected by a single center plate shim not to exceed 1/4" thickness, provided 1-1/8" or more vertical bearing surface of the truck bolster rim is maintained.

12. SIDE FRAMES:

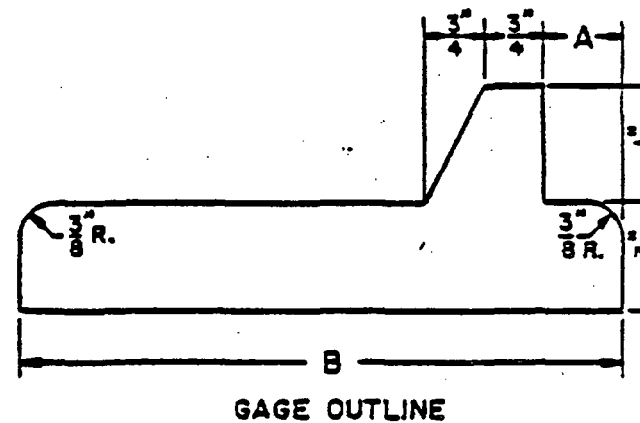
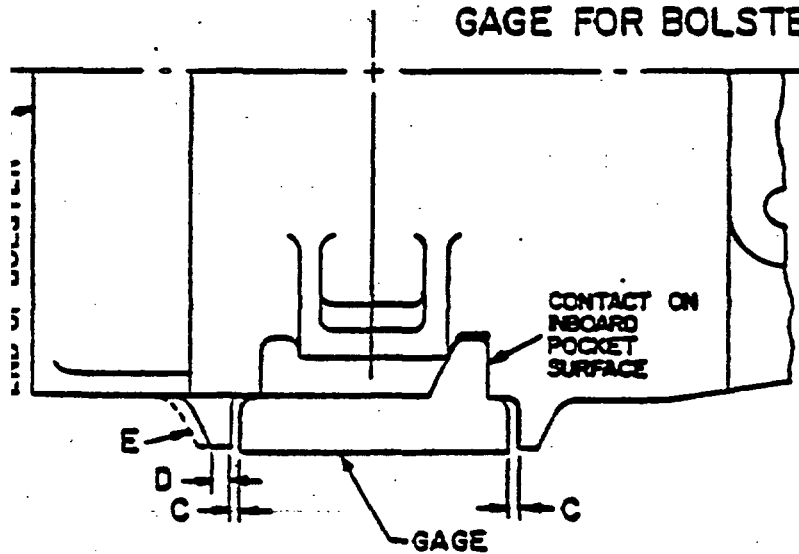
- a. Roof pedestal wear liners are to be applied one-hundred percent.
- b. Column guide wear plates are to be replaced if cracked, broken, or if 3/8" shim fits between the end of the gauge and wear plate. Replace wear plate and rebuild side frame column if necessary. The finish distance between the end of the gauge and the wear plate shall be 1/8" or less.
- c. Column wear plates applied are to be welded in six (6) locations per manufacturer's recommendations.
- d. Rebuild side frame Gib wear.

13. TRUCK BOLSTERS:

- a. If the inside diameter of the truck bolster bowl is worn at any point to 14-1/2", the bowl rim must be removed and a new rim must be applied.
- b. Rebuild side frame gib if 3/8" shim fits between the gauge and side frame gib. After rebuilding, gauge should fit over gibs with a gap of 1/8" or less.
- c. If the gap at the end of the bolster gib gauge is 1/4" or more, gibs are to be restored to original contour.

### 13. TRUCK BOLSTERS - (CONT'D)

**GAGE FOR BOLSTER GIB RESTORATION**



TOLERANCE FOR NEW BOLSTER BETWEEN GIBS IS  $+\frac{1}{8} - 0$

IF GAP AT "C" IS  $\frac{1}{4}$ " OR MORE, BUILD UP WITH WELD TO FIT GAGE.

TYPE & CAPACITY	A	B
70-TON REGULAR BARBER	$\frac{5}{8}$ "	$7\frac{3}{8}$ "
70-TON WIDE LAND	$1\frac{3}{8}$ "	$8\frac{7}{8}$ "

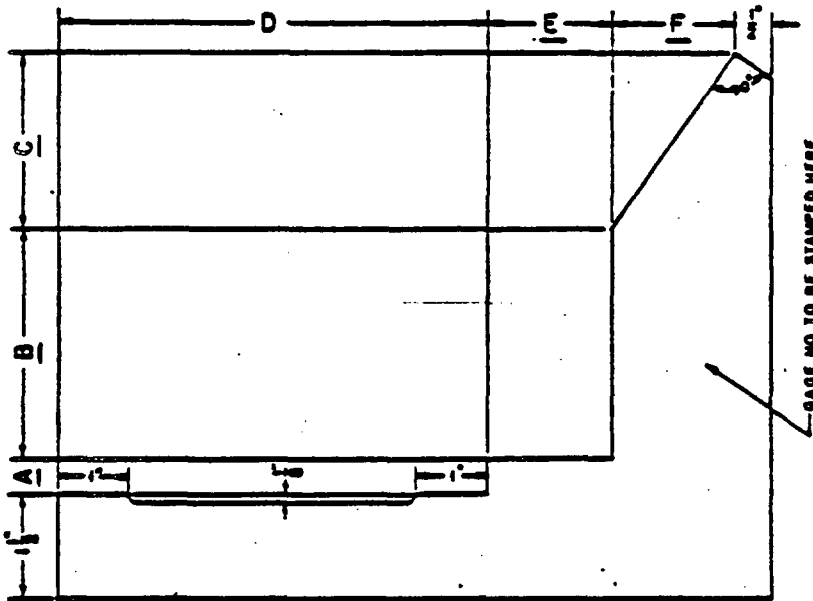
**NOTE:**  
Bolsters cast before 1967 are unacceptable.

### 13. TRUCK BOLSTERS - (CONT'D.)

All truck bolster friction pockets are to be gauged as outlined in manufacturer's maintenance manuals. Contours are to be restored per the following instructions.

#### S-2-C Design Truck Bolsters:

#### GAGE FOR BOLSTER POCKET RESTORATION



MATERIAL:  $\frac{1}{8}$  G.H.S.

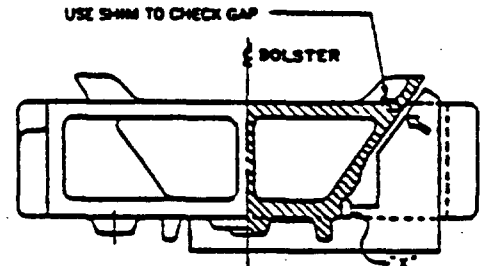
UNDERScoreD DIMENSIONS ARE IMPORTANT

TYPE OF BOLSTER	A	B	C	D	E	F	GAGE NO.	WEAR PLATE DRG. LINE
5" X 9" S-2-A	.5"	3.1875	2.3125	5"	1.4375	1.625	1	4477 1
5 1/2" X 10" S-2-A	.5"	3.25	2.3125	5"	1.50	1.625	2	" 2
6" X 11" S-2-A	.5"	3.25	2.50	6"	1.75	1.75	3	" 3
7" X 12" S-2-A	.5"	3.00	2.50	6"	1.875	1.75	4	" 4
5" X 9" S-2-C	.5"	2.875	2.3125	5"	1.50	1.625	5	" 2
5 1/2" X 10" S-2-C	.5"	2.50	2.50	6"	1.375	1.75	6	" 3
6" X 11" S-2-C	.5"	2.875	2.3125	5"	1.50	1.625	5	4580 -

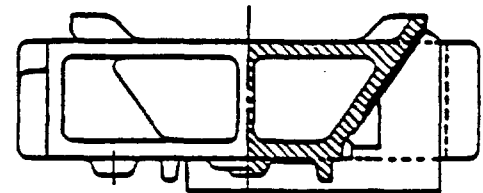
\* LOW CONVEYANCE TRUCK WITH D-4 SPRINGS, FOR ALL OTHER S-2-B BOLSTERS USE S-2-C GAGES.

WHEN GAGE CONTACTS POCKET SURFACE "T" AND GAP EXCEEDS 1/8" WORN BOLSTER POCKET SHOULD BE REPAIRED BY BUILD-UP WITH WELD. IF GAP IS FOUND TO BE THE 1/4" MAXIMUM ALLOWABLE, REPAIR CAN BE MADE BY APPLICATION OF WEAR PLATE OR BUILD-UP WITH WELD.

USE SHIM TO CHECK GAP



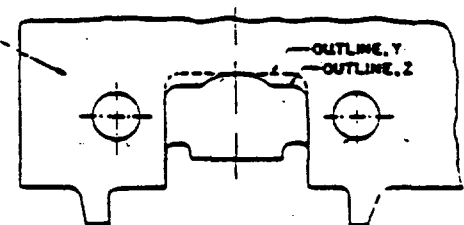
GAGE IN WORN BOLSTER POCKET



GAGE IN REPAIRED BOLSTER POCKET

BOTTOM SURFACE OF BOLSTER

ALL BOLSTER POCKETS HAVE OUTLINE Z EXCEPT SOME 70 & 100 TON S-2 B & S-2 C WHICH HAVE DOTTED OUTLINE Y



WHEN USING GAGE 3 AND POCKET HAS DOTTED OUTLINE Y A 3/8" SHIM MUST BE INSERTED BETWEEN SURFACE X AND GAGE

# 13. TRUCK BOLSTERS - (CONT'D.)

## A-3 Design Truck Bolsters:

### RECOMMENDED REPAIR PROCEDURES

#### A. BOLSTER POCKET SLOPE SURFACES

##### 1. WEAR DETERMINATION

Determine the amount of slope wear using the Angle Surface Contour Gauge 1-7927- (Page 14).

With this gauge in position, if a  $\frac{1}{16}$ " shim can be inserted between gauge and the slope surface at any point, repairs to the surfaces should be made.

##### 2. REPAIR OF ASF CAST SLOPE SURFACE

Worn slopes should be restored by the Puddle Weld Method shown on Drawing 1-8105 (Page 15).

Check flatness and alignment of both surfaces with a new Winged Friction Shoe Casting.

NOTE—SOME CASTING CLEARANCE IS ESSENTIAL AS A SNUG FIT COULD CAUSE BINDING IN SERVICE.

##### 3. REPAIR OF SLOPE SURFACE WITH WEAR PLATES

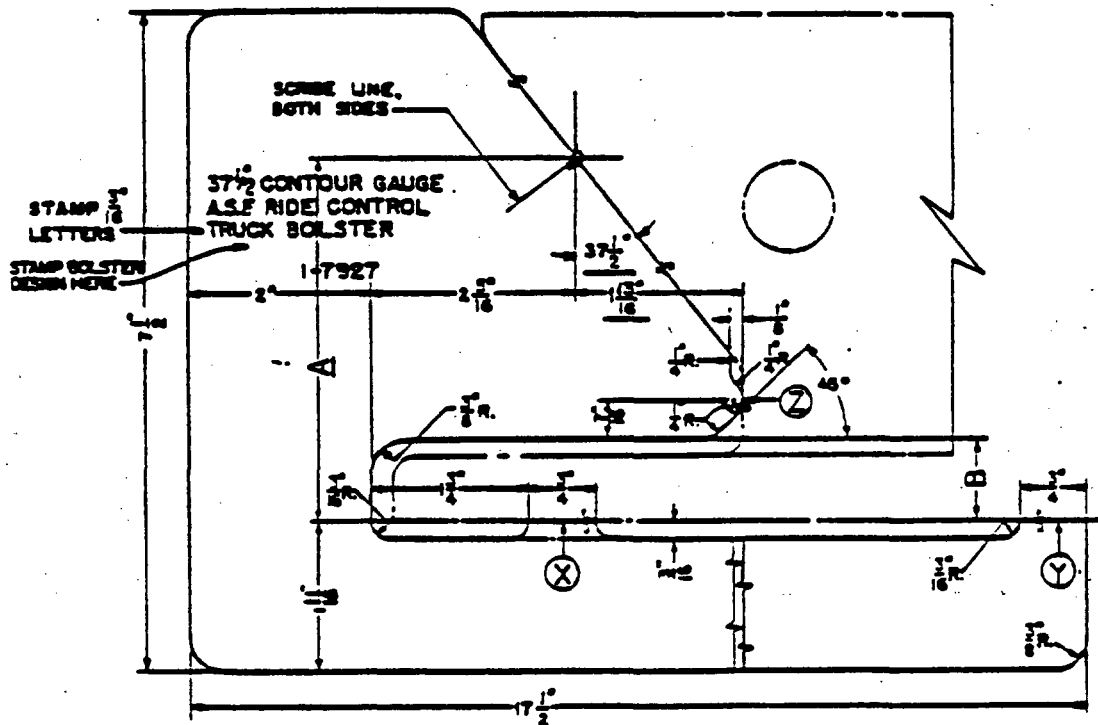
Remove and replace all broken or cracked slope surface wear plates.

Repairs should be in accordance with Drawing 1-8416 (Page 16).

Check alignment of both plates with a new winged friction shoe casting.

##### 4. REPAIR INSPECTION

After repairs are completed, recheck using the same Angle Surface Contour Gauge 1-7927- previously used for determining amount of wear.



#### MEASURING BOLSTER ANGLE SURFACE

POSITION GAUGE AT AN ANGLE SURFACE OF BOLSTER SHOE POCKET WITH CONTACT AT POINTS "X," "Y," & "Z" AS SHOWN, AND MEASURE WEAR AT ANGLE SURFACE. REPEAT FOR OTHER SHOE POCKETS.

SURFACES MARKED "S" AND DIMENSIONS UNDERSCORED ARE IMPORTANT.

MATERIAL:  $\frac{1}{8}$ " MILD STEEL PLATE.

#### BOLSTER DESIGNS

STANDARD:	A	B
100 TON - ALL DESIGNS		
70 TON - GRADE "S" & "C" D3, D4 & D5 COILS	$4\frac{1}{8}$ "	$15\frac{1}{16}$ "

#### SPECIAL:

70 TON A-3 - GR. "C" ONLY	$315\frac{1}{16}$ "	$3\frac{1}{4}$ "
70 TON - D7 COILS ONLY	4"	$13\frac{1}{16}$ "

37 1/2° ANGLE SURFACE CONTOUR GAUGE FOR  
70 AND 100 TON RIDE CONTROL TRUCK BOLSTERS



14. BODY CENTER PLATES:

Fabricated center plates are to be inspected and repaired per Procedure CP-100 (copy attached). Cast steel center plates if broken or cracked are to be replaced.

15. COUPLERS, KNUCKLES, DRAFT KEYS, UNCOUPLING LEVERS, AND COUPLER CARRIER WEAR PLATES

Are to be inspected, replaced, and adjusted where applicable per AAR Interchange Rule 16.

16. YOKES:

Yokes are to be inspected and replaced per AAR Interchange Rule 19.

17. DRAFT GEARS, CARRIERS, AND FOLLOWERS:

Are to be inspected and replaced per AAR Interchange Rule 21.

18. AIR BRAKES:

a. Cars within six (6) months of expiration date will, receive COT&S per AAR Interchange Rule 2.

b. Replace air brake hose per AAR Interchange Rule 5, except remove brake hose when seven (7) years, six (6) months old.

19. PLUG DOORS:

a. New door gaskets are to be applied one-hundred percent.

b. No paint or lubrication on door tracks.

c. Third arm safety hangers are to be applied as required.

d. Repair or replace damaged wood door lining and rubber door stops.

e. Lubricate and inspect doors per the attached AAR Instructions (Figure 4.7 and 4.9).

f. Drill holes in outside door operating pipes per Instruction No. D-100, (copy attached). Two 1/4" holes are to be applied in each cover plate for lubricating gear segment.

20. SIDE WALL FILLERS:

Remove side wall fillers one-hundred percent and reline wall with plywood.

21. INTERIOR OF CAR:

Excessively damaged side lining and flooring is to be repaired as required. Holes in ceiling are to be repaired by nailing a suitable metal covering over holes. 3/16" thick x 24" high KEMLITE or equal scuff lining is to be applied to side walls.

PROCEDURE CP-100

SUBJECT:

Repair to fabricated center plates.

GENERAL:

When cars are received in shop with the 1-1/8" center plate base cracked, the center plate must be removed from the car and the crack must be vee'd out on both sides and welded per the attached welding instruction CP-102.

If either reinforcement bar has cracked in the weld joint the full length of one side of the reinforcement only, repair on car per welding instruction CP-101.

If weld fastening reinforcement to base plate is cracked on both sides, remove center plate from car and repair per welding instruction CP-102. If weld fastening reinforcement to base plate is cracked on one side of reinforcement and cracks have started around end or ends of the reinforcement, remove center plate from car and repair per welding instruction CP-102.

If bowl is cracked 4" fore or aft, remove center plate from car and repair per welding instruction CP-102. If less than 4", vee out weld and repair on car per welding instruction CP-101.

If diameter of bowl is reduced by 11/16" at any point, replace bowl.

Where elected to use CO<sub>2</sub> process, follow instructions W-101, CP-103 and CP-104, copies attached.

PROCEDURE SPECIFICATION FOR

REPAIR OF CENTER PLATES  
WHILE ON CAR  
SPECIFICATION NO. CP-101

PROCESS: The welding shall be done by the Shielded Metal Arc Welding Process (Stick).

BASE METAL: The base metal shall conform to the specification for ASTM A-441.

FILLER METAL: The filler metal shall conform to the Classification No. E-7018 of the American Welding Society's Specification for Mild Steel Covered Arc Welding Electrodes (AWS A5.1-69).

NATURE OF ELECTRIC CURRENT: The current shall be DCRP. The base material shall be on the negative side of the line.

PREPARATION OF BASE MATERIAL: Cracks or defects in the center plate weld shall be air arc gouged to the full depth of the crack and into sound metal. Sufficient base metal must be left in the root area to support a weld and still obtain 100% penetration. (See Figure I). The faces of the groove shall be smooth with no gouges or knicks, prior to welding.

PREHEAT & INTERPASS TEMPERATURE: The base metal shall be preheated to 150°F and this minimum temperature maintained during welding. Maximum interpass temperature shall not exceed 450°F.

WELDING TECHNIQUE: All welding will be in the overhead position. Weld heads shall not exceed 1/4" in thickness or width, except for the top over pass. The welding technique, electrode size and travel speeds shall be substantially as shown in Table I.

CLEANING: All slag or flux remaining on any bead of welding shall be removed before laying down the next successive bead of welding. All rust, dirt, grease, or oil shall be removed prior to the start of welding.

**DEFECTS:** Any cracks, blow holes or other defects that appear on any surface of any bead of welding shall be removed by chipping, grinding, arc gouging or other suitable means, before depositing the next successive bead of welding.

T A B L E I

<u>PASS NUMBER</u>	<u>ELECTRODE SIZE</u>	<u>POLARITY</u>	<u>AMPS</u>	<u>TRAVEL SPEED (IPM)</u>
1	1/8	DCRP	130 $\pm$ 10	4 - 5
2	1/8	DCRP	130 $\pm$ 10	5 - 6
3	1/8	DCRP	130 $\pm$ 10	5 - 6
Top Pass	1/8	DCRP	130 $\pm$ 10	5 - 6

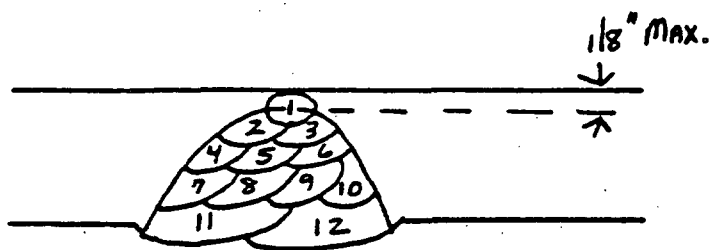


FIGURE I

The number of beads of weld may vary due to depth of groove, travel speed, etc.

# WELDING PROCEDURE CP-101

## SINGLE V-GROOVE

MATERIAL SPECIFICATION: A-441 ONLY  
 SINGLE OR MULTIPLE ARC: Single  
 ROOT TREATMENT: V-Groove  
 PREHEAT-INTERPASS TEMP: 150°F Minimum -- 450°F Maximum  
 POST HEAT TREATMENT: None

### SMAW

PROCEDURE SUBDIVISION: Stick  
 WELDING PROCESS: SMAW  
 POSITION OF WELDING: Overhead  
 MANUAL OR MACHINE: Manual  
 FILLER METAL SPEC: AWS A5.1-A5.5  
 FILLER METAL CLASSIFICATION: E-7018  
 SINGLE OR MULTIPLE PASS: Multiple Pass  
 WELDING CURRENT: DCRP  
 WELDING PROGRESSION: As Listed

PASS NUMBER	ELECTRODE SIZE	WELDING CURRENT AMPS	TRAVEL SPEED (IPM)
1	1/8	130 ± 10	5 - 6
2	1/8	130 ± 10	5 - 6
3	1/8	130 ± 10	5 - 6
4	1/8	130 ± 10	5 - 6
5	1/8	130 ± 10	5 - 6

The number of passes may vary due to joint design and depth of opening.

PROCEDURE SPECIFICATION FOR

REPAIR OF CENTER PLATES  
OFF CARS

SPECIFICATION NO. CP-102

PROCESS: The welding shall be done by the Shielded Metal Arc Welding Process (Stick).

BASE METAL: The base metal shall conform to Specification For ASTM A-441.

FILLER METAL: The filler metal shall conform to the Classification No. E-7018 and E-7028 of the American Welding Society's Specification for Mild Steel Covered Arc Welding Electrodes (AWS A5.1-69).

NATURE OF CURRENT: The current shall be DCRP. The base material shall be on the negative side of the line.

PREPARATION OF BASE MATERIAL: Cracks or defects in the center plate shall be air arc gouged to the full depth of the crack. Cracks which extend to the full thickness of the plate shall be gouged to a depth of  $1/2 T$ , starting from the top side of the center plate. Edges of the gouged area shall be smooth with no abrupt knicks or gouges prior to welding. Gouging shall extend to 1" past the end of any crack. The top side shall be re-welded prior to backgouging of the bottom side.

PREHEAT & INTERPASS TEMPERATURE: The base metal shall be preheated to 150°F minimum and this minimum temperature maintained during welding. Maximum interpass temperature shall not exceed 450°F. Temperature shall be measured at a distance of three (3) inches from the center of the groove.

WELDING TECHNIQUE: All welding will be in the flat position. Root pass shall be with  $1/8$  diameter E-7018. Subsequent passes may be with larger diameter E-7018 or E-7028, using stringer beads. Weld reinforcement shall be kept to a minimum and then ground flush with the surface of the plate after weld is completed. The electrode size and travel speeds shall be substantially as shown in Table I or Table II.

CLEANING: All slag or flux remaining on any bead of welding shall be removed before laying down the next successive bead of welding. All rust, dirt, grease or oil shall be removed prior to the start of welding.

**DEFECTS:** Any cracks, blowholes, porosity or other defects that appear on any surface of any bead of welding shall be removed by chipping, grinding, arc gouging or other suitable means, before depositing the next successive bead of welding.

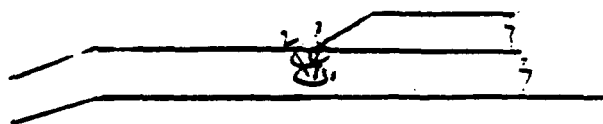
TABLE I (E-7018)

<u>PASS NUMBER</u>	<u>ELECTRODE SIZE</u>	<u>POLARITY</u>	<u>AMPS</u>	<u>TRAVEL SPEED (IPM)</u>
1	1/8	DCRP	130 + 10	5 - 6
2	1/8	DCRP	130 $\pm$ 10	5 - 6
3	1/4	DCRP	330 $\pm$ 20	12 - 15
4	1/4	DCRP	330 $\pm$ 20	12 - 15
TOP PASS	1/4	DCRP	330 $\pm$ 20	12 - 15

TABLE II (E-7028)

<u>PASS NUMBER</u>	<u>ELECTRODE SIZE</u>	<u>TYPE</u>	<u>POLARITY</u>	<u>AMPS</u>	<u>TRAVEL SPEED (IPM)</u>
1	1/8	E-7018	DCRP	130 $\pm$ 10	5 - 6
2	3/16	E-7028	DCRP	245 $\pm$ 15	12 - 15
3	3/16	E-7028	DCRP	245 $\pm$ 15	12 - 15
4	3/16	E-7028	DCRP	245 $\pm$ 15	12 - 15
TOP PASS	3/16	E-7028	DCRP	245 $\pm$ 15	12 - 15

FIGURE I



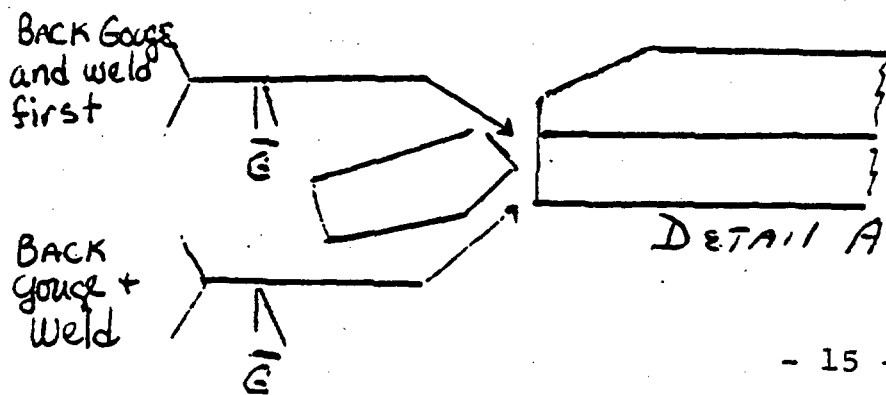
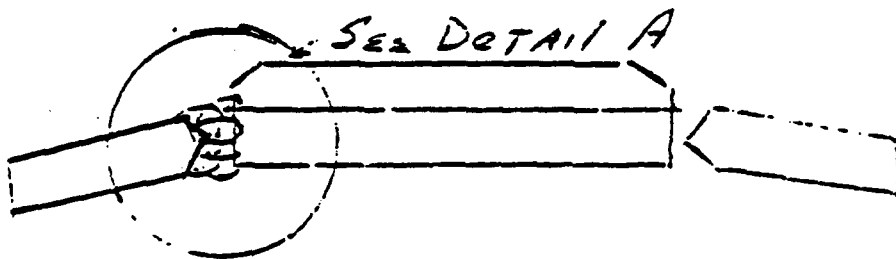
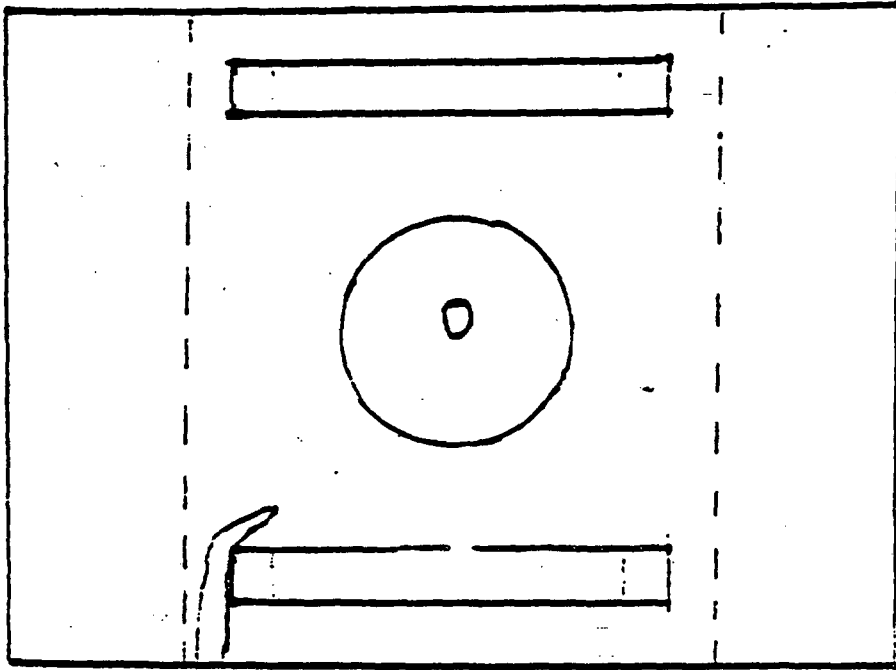
ONE SIDE



BOTH SIDES

The number of beads may vary due to depth of groove, travel speeds, etc.

FIGURE II





REPAIR PROCEDURES FOR  
REBUILDING CENTER PLATES OFF CAR WITH CO<sub>2</sub>

SPECIFICATION NO. CP-103

PROCESS: The welding shall be done by the gas shielded, flux-cored arc welding process.

BASE METAL: The base metal shall conform to the Specification for ASTM A-441 AISI 1020 or AISI 1030.

FILLER METAL: The filler metal shall conform to the Classification No. E70T-1 of the American Welding Society's Specification For Carbon Steel Electrodes For Flux-Cored Arc Welding (AWS 5.2-79).

NATURE OF ELECTRICAL CURRENT: The current shall be DCRP. The base metal shall be on the negative side of the line.

PREPARATION OF BASE MATERIAL: Cracks or defects in the center plate will be arc air gouged to the full depth of the crack and into sound metal. In cases where the crack or defect extends through the full thickness of the plate, half the thickness will be gouged out and the root pass put in before back-gouging from the opposite side. When back-gouging, all traces of the crack shall be removed back to sound metal. The faces of the groove shall be ground smooth with no gouges or knicks, prior to welding.

PREHEAT AND INTERPASS TEMPERATURE: The base metal shall be preheated to 150°F and this minimum temperature maintained during welding. Maximum interpass temperature shall not exceed 450°F.

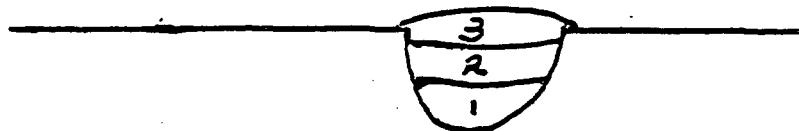
WELDING TECHNIQUE: All welding shall be in the downhand (flat) position. The welding technique, electrode size and travel speeds shall be substantially as shown in Table 1. Bead sequence is shown in Figure 1.

**CLEANING:** All slag or flux remaining on any bead of welding shall be removed before laying down the next bead of welding. All rust, dirt, grease or other contaminant shall be removed prior to the start of welding.

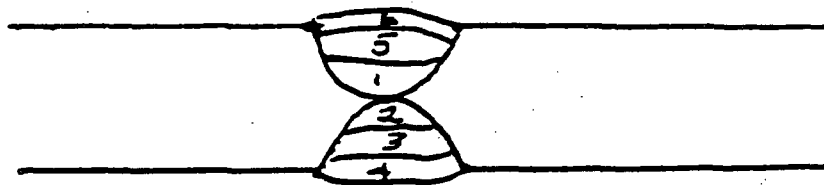
**DEFECTS:** Any cracks, blowholes or other defects that appear on any surface of any bead of welding shall be removed by chipping, grinding or arc gouging or other suitable means, before depositing the next successive bead of welding.

TABLE 1

<u>PASS NO.</u>	<u>ELECTRODE SIZE</u>	<u>CO<sub>2</sub> GAS FLOW</u>	<u>AMPS</u>	<u>VOLTS</u>	<u>TRAVEL SPEED</u>
1	5/64	35 CFM	385 $\pm$ 20	27 $\pm$ 2	15-16 IPM
2	5/64	35 CFM	385 $\pm$ 20	27 $\pm$ 2	15-16 IPM
3	5/64	35 CFM	385 $\pm$ 20	27 $\pm$ 2	15-16 IPM
Top Pass	5/64	35 CFM	385 $\pm$ 20	30 $\pm$ 2	16-18 IPM



SINGLE GROOVE WELD



DOUBLE GROOVE WELD

FIGURE 1

Number of beads of weld may vary due to depth of groove, travel speed, etc.

REPAIR PROCEDURES FOR  
REPLACING CENTER BOWLS  
AND STIFFENERS AND NEW CONSTRUCTION

SPECIFICATION NO. CP-104

PROCESS: The welding shall be done by the gas shielded, flux-cored arc welding process.

BASE METAL: The base metal shall conform to the Specification for ASTM A-441 AISI 1020 or AISI 1030.

FILLER METAL: The filler metal shall conform to the Classification No. E70T-1 of the American Welding Society's Specification For Carbon Steel Electrodes For Flux-Cored Arc Welding (AWS 5.2-79).

NATURE OF ELECTRICAL CURRENT: The current shall be DCRP. The base metal shall be on the negative side of the line.

PREPARATION OF BASE MATERIAL: After old center bowl has been removed, top of center plate shall be ground smooth and flat before replacing new center bowl. Tack weld new center bowl in place, after centering on plate.

PREHEAT & INTERPASS TEMPERATURE: The base metal shall be preheated to 150°F and this minimum temperature maintained during welding. Maximum interpass temperature shall not exceed 450°F.

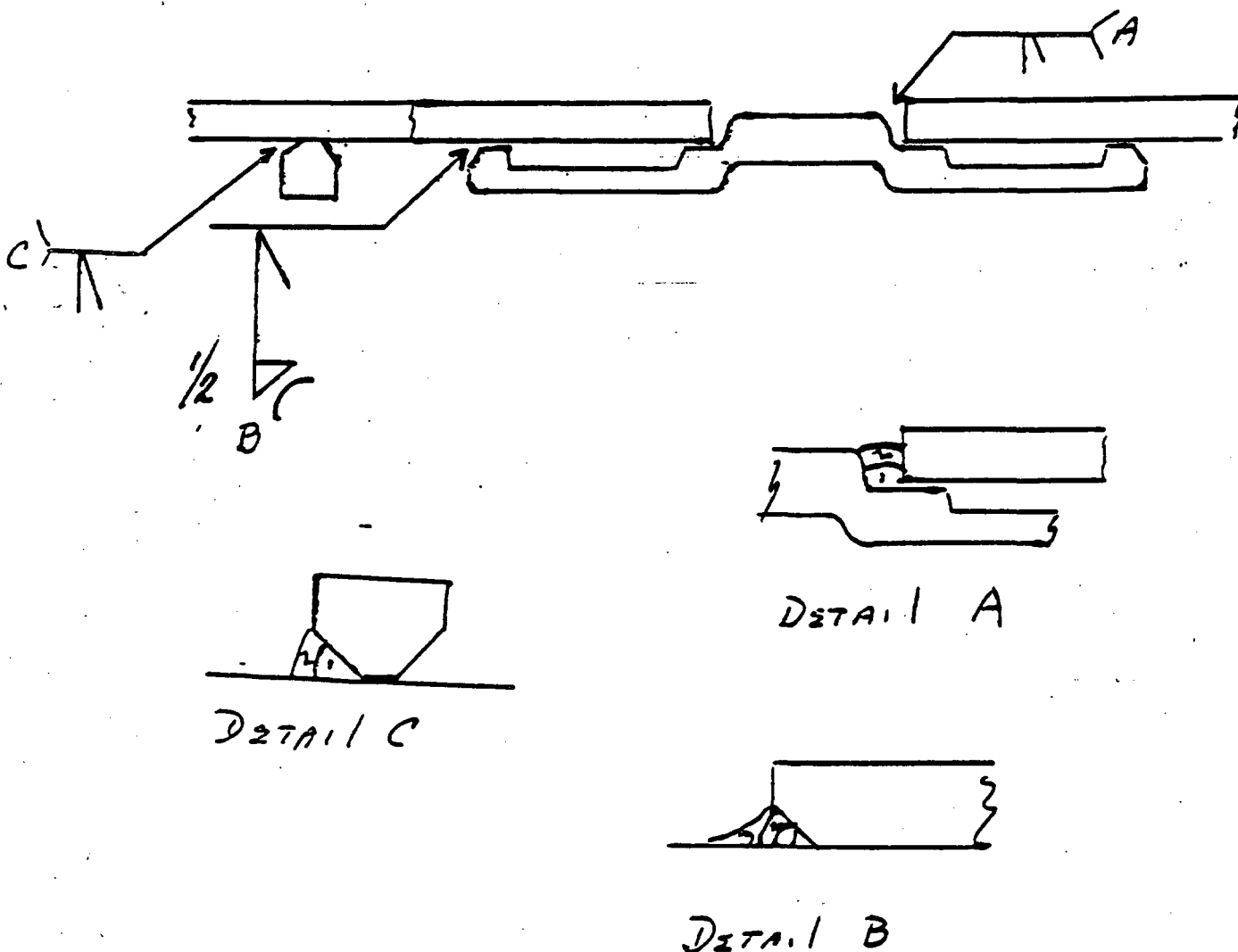
WELDING TECHNIQUE: All welding shall be positioned so as to weld in the down-hand (flat) position. The welding technique, electrode size and travel speeds shall be substantially as shown in Table 1. Bead sequence is shown in Figure 1.

CLEANING: All slag or flux remaining on any bead of welding shall be removed before laying down the next bead of welding. All rust, dirt, grease or other contaminant shall be removed prior to the start of welding.

**DEFECTS:** Any cracks, blowholes or other defects that appear on any surface of any bead of welding shall be removed by chipping, grinding or arc gouging or other suitable means, before depositing the next successive bead of welding.

T A B L E 1

<u>PASS NO.</u>	<u>ELECTRODE SIZE</u>	<u>CO<sub>2</sub> GAS FLOW</u>	<u>AMPS</u>	<u>VOLTS</u>	<u>TRAVEL SPEED</u>
1	5/64	35 CFH	385 $\pm$ 20	27 $\pm$ 2	15-16 IPM
2	5/64	35 CFH	385 $\pm$ 20	27 $\pm$ 2	15-16 IPM
3	5/64	35 CFH	385 $\pm$ 20	29 $\pm$ 2	16-18 IPM

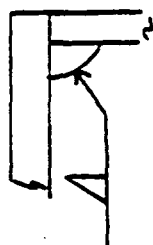


# WELDING PROCEDURE W-101

PAGE 1 OF 4

## FILLET WELDS

ALL GENERAL WELDING REQUIREMENTS ARE INCORPORATED AS A PARTICULAR PART OF THIS SPECIFICATION



MATERIAL SPECIFICATION: Group I or II (AWS D1.1, Sec. 4)  
 SINGLE OR MULTIPLE ARC: Single  
 ROOT TREATMENT: Fillet Weld  
 PREHEAT-INTERPASS TEMP: Per General Requirements  
 POST HEAT TREATMENT: N/A

STICK WELDING	PASS NO.	ELECTRODE SIZE	WELDING CURRENT		TRAVEL SPEED (IPM)	JOINT DETAILS
			AMPS	VOLTS		
Welding Process	1	1/8"	130 + 10	20-21	5-6	Flat-Horizontal-Overhead 3/
Position of Welding	1	1/8"	130 + 10	20-21	4-5	Flat-Horizontal-Overhead 1/
Manual Or Machine						
Filler Metal Spec. AWS	1	5/32"	150 + 10	20-22	7-8	Flat-Horizontal-Overhead Fillet 3/16"
Filler Metal Classification						
Flux	1	5/32"	150 + 10	20-22	6-7	Flat-Horizontal-Overhead Fillet 3/4"
Shielding Gas						
Flow Rate	1	5/32"	150 + 10	20-22	5-6	Flat-Horizontal-Overhead Fillet 5/16"
Single or Multipass						
Welding Current	1	1/8"	130 + 10	20-22	4-5	Vertical Up 3/16"
Welding Progression	1	1/8"	130 + 10	20-22	3/4	Vertical Up 1/4"
	1	1/8"	130 + 10	20-22	5-6	Vertical Up 1/8"

WELDING PROCEDURE W-101 (Continued) :

PAGE 2 OF 4

**INNERSHIELD**

	PASS NO.	ELECTRODE SIZE	WELDING CURRENT		TRAVEL SPEED (IPM)	JOINT DETAILS
			AMPS	VOLTS		
Welding Process	1	3/32"	325 + 20	25 + 2	10-12	Horizontal-Flat 3/8"
Welding Process	1	3/32"	325 + 20	25 + 2	12-14	Horizontal-Flat 5/16"
Position of Welding	1	3/32"	325 + 20	25 + 2	14-16	Horizontal-Flat 1/4"
Manual Or Machine	1	3/32"	325 + 20	25 + 2	16-18	Horizontal-Flat 3/16"
Filler Metal Spec. AWS	1	3/32"	325 + 20	25 + 2	9-11	Flat 1/2"
Filler Metal Classification						
Flux						
Shield Gas						
Flow Rate						
Single or Multipass						
Welding Current						
Welding Progression						

Flat-Horiz.

DCSP

Single

N/A

N/A

N/A

E70T-G

A5.20-79

Semi-Auto.

As Listed

FCAW

FCAW

FCAW

FCAW

FCAW

FCAW

FCAW

FCAW

FCAW

FCAW

WELDING PROCEDURE W-101(Continued):**CO<sub>2</sub> SHIELDING**

	PASS NO.	ELECTRODE SIZE	WELDING AMPS	CURRENT VOLTS	TRAVEL SPEED (IPM)	JOINT DETAILS
Welding Process		FCAM				
Position of Welding		As Listed				
Manual Or Machine		Semi-Auto.				
Filler Metal Spec. AWS		A5.20-79				
Filler Metal Classification		E70T-1				
Flux		N/A				
Shield Gas		CO <sub>2</sub>				
Flow Rate		30-35 CFH				
Single or Multipass		Single				
Welding Current		DCRP				
Welding Progression		As Listed				

1	5/64"	380 + 25	29 + 2	14-16	Flat-Horizontal 3/8"
1	5/64"	380 + 25	29 + 2	16-18	Flat-Horizontal 5/16"
1	5/64"	380 + 25	29 + 2	20-21	Flat-Horizontal 1/4"
1	5/64"	380 + 25	29 + 2	9-11	Flat 1/2"
1	.045	180 + 10	22 + 2	22-23	Flat-Horizontal 1/8"
1	.045	180 + 10	22 + 2	20-21	Flat-Horizontal 3/16"
1	.045	180 + 10	22 + 2	18-20	Flat-Horizontal 1/4"
1	.045	180 + 10	22 + 2	15-17	Flat 3/8"

WELDING PROCEDURE W-101 (Continued):

PAGE 4 OF 4

SUBARC		PASS NO.	ELECTRODE SIZE	WELDING AMPS	CURRENT VOLTS	TRAVEL SPEED (IPM)	JOINT DETAILS
Welding Process	SAW	1	5/64"	350 + 25	28 + 2	21-23	Flat-Horizontal 3/16"
Position Of Welding	As Listed	1	5/64"	400 + 25	29 + 2	15-16	Flat-Horizontal 1/4"
Manual Or Machine	Semi-Auto.	1	5/64"	400 + 25	29 + 2	11-12	Flat-Horizontal 5/16"
Filler Metal Spec. AWS	A5.23						
Filler Metal Classification	F72-EM12k						
Flux	F-72						
Shield Gas	N/A						
Flow Rate	N/A						
Single Or Multipass	Single						
Welding Current	DCRP						
Welding Progression	As Listed						

THESE PROCEDURES MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC. WITHIN THE LIMITATIONS OF VARIABLES GIVEN IN 4B-C-D of AWS D1.1 STRUCTURAL WELDING CODE.

REVISION NO.



INSTRUCTION NO. D-100

SUBJECT:

1/4" Holes in Outside Door Operating Pipes.

GENERAL:

A 1/4" diameter hole is to be drilled in each operating pipe as low as possible above the solid shaft. This vent hole is to be drilled in the operating pipes prior to heat being applied to the pipes, to eliminate the possibility of water entrapment in pipes.

# Association of American Railroads Lubrication Manual

NOTE: See Paragraph 4.1.

## LUBRICATION POINTS

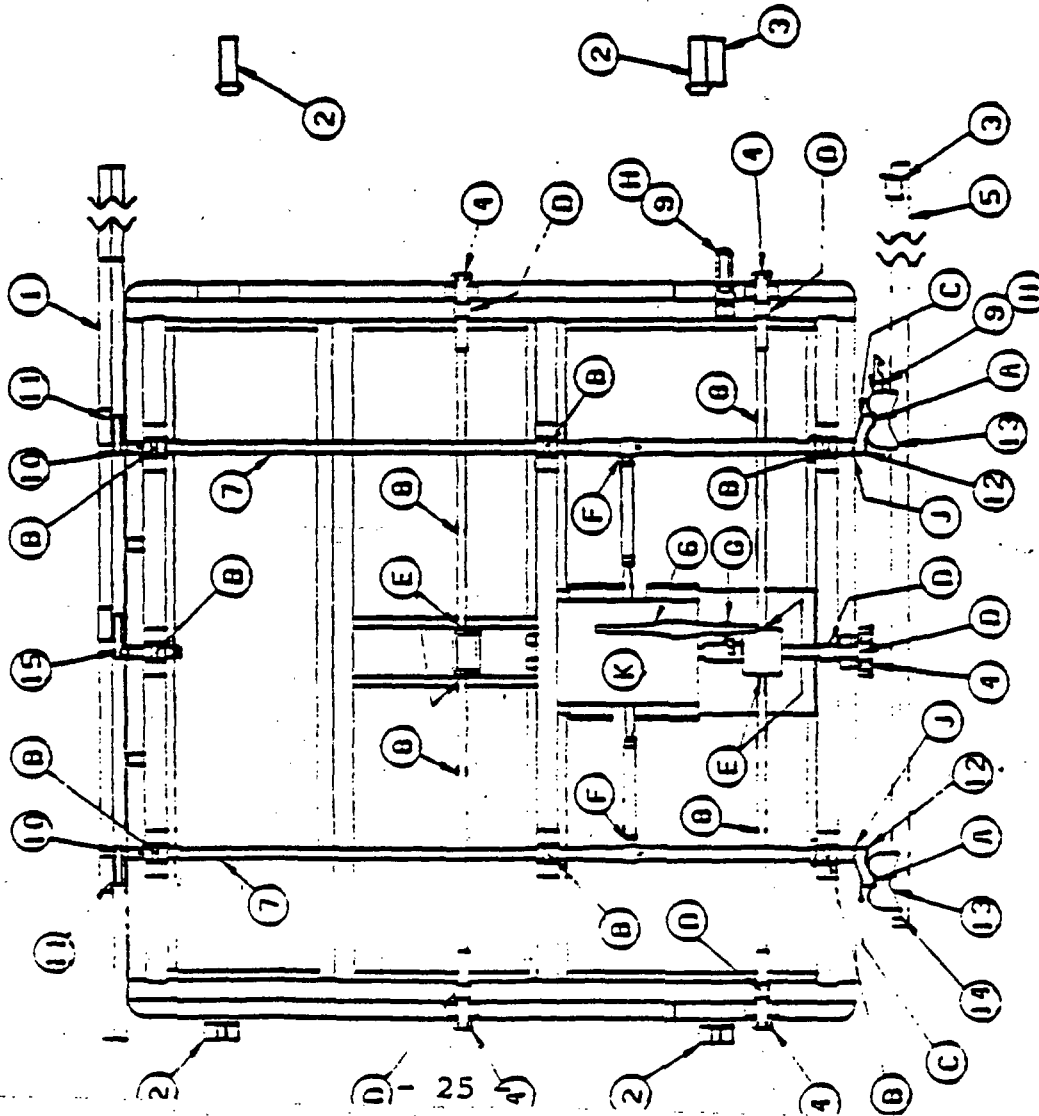
- A. Grease adjustable crankshafts.
- B. Grease all connection pipe fulcrums.
- C. Oil threads of adjustable crankshafts.
- D. Oil all lock bolt guidens.
- E. Oil lock bolt operating cams.
- F. Oil clevis pins.
- G. Oil sealing cam joints.
- H. Oil hold open device joints.
- J. Oil thrust washers.
- K. Oil holes in cover plate.

## DOOR INSPECTION

Check for broken, damaged or missing parts.

- 1. Top Retainer.
- 2. Front & Back Stops.
- 3. Hold Open brackets.
- 4. Aux. Lock Bolt Brackets.
- 5. Door Track: No alterations permitted.
- 6. Operating Lever.
- 7. Connection Pipes.
- 8. Aux. Lock Operating Bars.
- 9. Hold Open Device.
- 10. Top Operating Cranks.
- 11. Top Roller Assembly.
- 12. Bottom Operating Cranks.
- 13. Bottom Roller Assembly.
- 14. Door Stops on Track.
- 15. Top safety crank assembly.
- 16. Miscellaneous Defects.  
(Rubber gaskets, etc.)

• Various Types Shown



YOUNGSTOWN SINGLE PLUG DOOR GEAR OPERATED

# Association of American Railroads Lubrication Manual

NOTE: See Paragraph 4.1.

## LUBRICATION POINTS

- A. Grease adjustable crankshafts.
- B. Grease all connection pipe fulcrums.
- C. Oil threads of adjustable crankshafts.
- D. Oil all lock bolt guides.
- E. Oil lock bolt operating cam.
- F. Oil clevis pins.
- G. Oil sealing cam joints.
- H. Oil hold open device joints.
- J. Oil thrust washers.

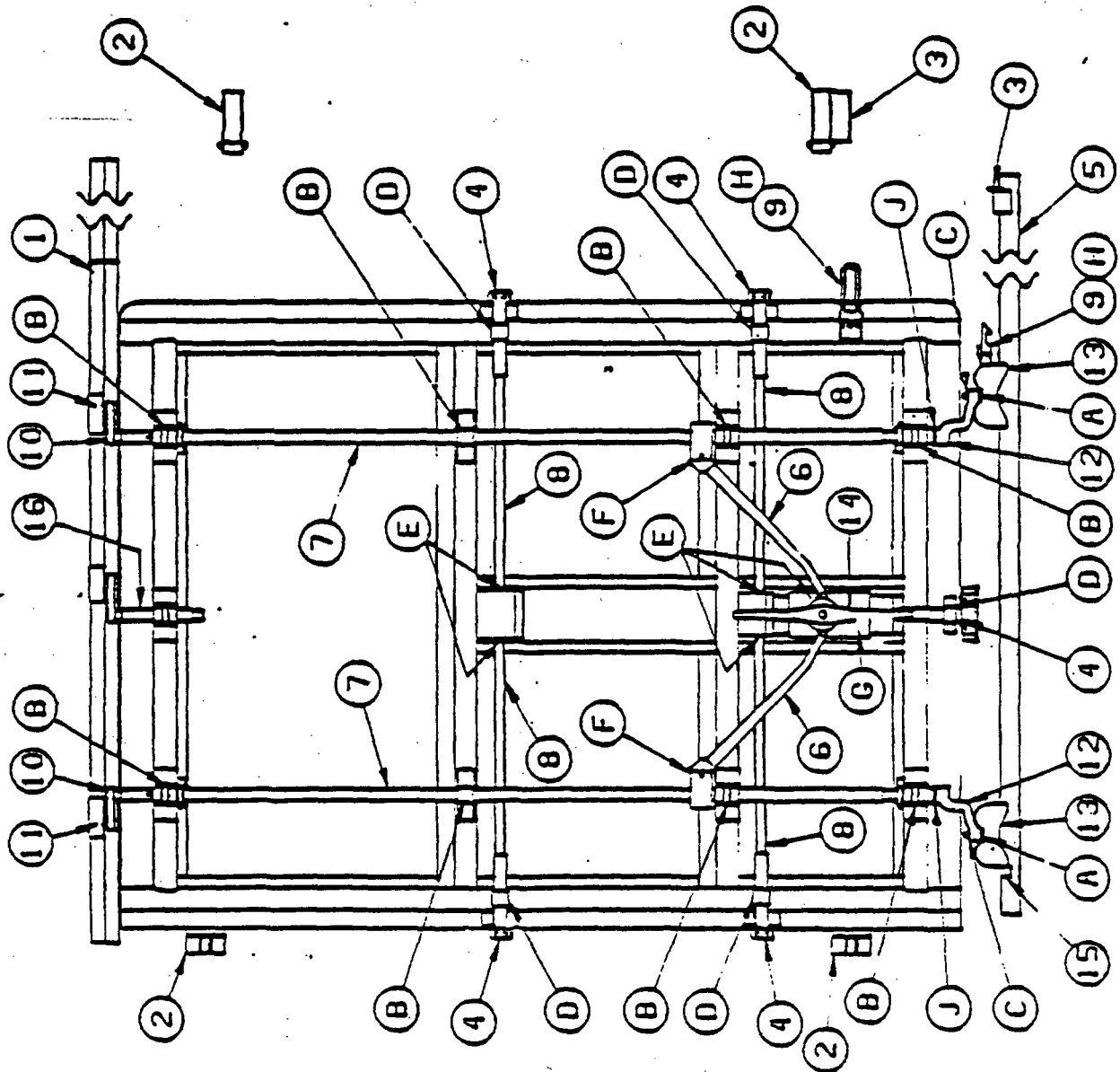
## DOOR INSPECTION

Check for broken, damaged or missing parts.

1. Top Retainer.
2. Front & Back Stops.
3. Hold Open Bracket.
4. Aux. Lock Bolt Brackets.
5. Door Track, no alterations permitted.
6. Operating Lever.
7. Connection Pipes.
8. Aux. Lock Operating Bars.
9. Hold Open Device.
10. Top Operating Cranks.
11. Top Roller Assembly.
12. Bottom Operating Cranks.
13. Bottom Roller Assembly.
14. Operating Lever.
15. Door Stops on Track.
16. Top safety crank assembly.
17. Miscellaneous Defects. (Rubber gaskets, etc.)

\*Various Types Shown

IMPORTANT: DO NOT STAND IN FRONT OF OPERATING LEVER ITEM ⑥ WHEN OPENING DOOR.



YOUNGSTOWN SINGLE  
PLUG DOOR LEVER OPERATED

Figure 4.0

22. ROOF:

Roof is to be inspected for leaks. Snap-in type plugs where found are to be removed and replaced with water pipe type plugs and coated with alumination sealant to ensure a tight seal around all foam application holes.

23. EXTERIOR OF SIDES AND ENDS:

All holes in side sheets and ends are to be patched by continuously welding a suitable metal plate all around to ensure a complete seal. Sides or ends that are bent but not to the extent of defect cardable damage are not to be repaired.

24. SAFETY APPLIANCES:

Safety appliances are to be in accordance with the latest edition of Federal Railroad Administration's Safety Appliance and Power Brakes Manual. When found bent, safety appliances are to be straightened so all required clearances are maintained.

25. LOAD DIVIDER GATES:

Cars equipped with one-piece load divider gates are to receive new carriage bearings one-hundred percent, and cleanable floor tracks are to be applied for a minimum of 30 feet through the doorway area. Modify bulkheads as required to operate with new floor track. Carriages, ceiling tracks, and floor tracks are to be thoroughly inspected and remaining floor tracks are to be cleaned of all debris and covered with metal continuously welded in place. One-piece swivel type load dividers are to be converted to non-swivel type. All load dividers are to have safety cables applied per manufacturer's recommendations. All load divider gates are to be painted, stencilled, and decals in Spanish and English are to be applied. Cars equipped with pneumatic type load dividers are to have the air bags inflated and all fittings inspected for leaks. Two piece load dividers are not acceptable.

26. CUSHIONING DEVICES:

Cushioning devices are to be inspected and repaired in accordance with the following instructions (copies attached).

- a. CU-100 Keystone Single Acting
- b. CU-101 Keystone Double Acting
- c. Freight Saver Installation and Maintenance Manual

INSTRUCTION NO. CU-100

SUBJECT:

Maintenance of Oil Level in Keystone Single Acting Cushioning Units.

GENERAL:

When cars are received in shop with excessive oil leaking from cushioning unit, the oil level is to be checked as outlined on Page 2 of this instruction.

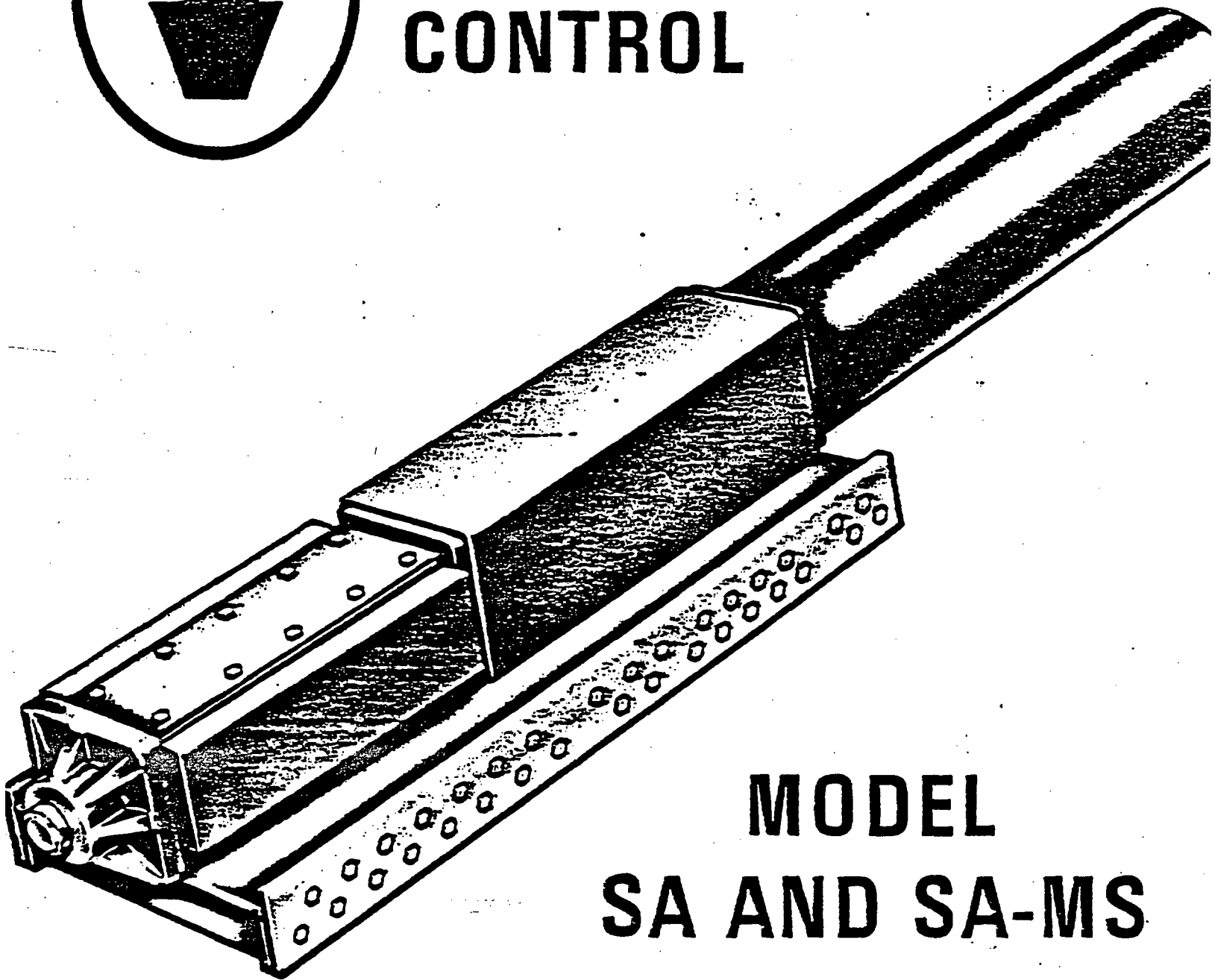
If more than 10 quarts of oil must be added to fill the unit, the unit must be replaced. If less than 10 quarts are required to fill the unit, the unit is to be steam cleaned and stencilled as follows:

OIL CHECKED - DATE \_\_\_\_\_ SHOP \_\_\_\_\_

When cars are received in shop with unit stencilled indicating previous inspection and unit is suspected of leaking, oil is to be checked, and if more than 5 quarts of oil is required for every year since stencilled date, unit must be replaced.



# **KEYSTONE SHOCK CONTROL**



## **MODEL SA AND SA-MS INSPECTION AND MAINTENANCE**

## FACTS AND FIGURES

Oil Capacity            SA                            36 QTS.  
                          SA-MS                        17½ QTS.

Oil Type            SAE 10W-30

Weights (approximate lbs.)

SA unit w/standard spring - 1530 •

SA unit w/heavy duty spring - 1638

SA-MS unit w/standard spring - 1200

Unit stop and carrier assembly - complete - 734

Torque value for carrier bolts 470-510 ft.-lbs.

Overall length

SA and SA-MS unit with standard spring 9'-7-3/8"

SA unit with heavy duty spring 10'-3-3/8"

## INSPECTION PROCEDURE

1. Any time a cushion underframe car, regardless of manufacturer, is on a repair truck, it is wise to inspect the complete underframe thoroughly and correct any deficiencies.
2. Insure that the sliding sill is properly centered. In the event that a sliding sill is stuck "off center", the return spring, may be in high compression, sufficient to cause unexpected sill movement.
3. Oversolid stops - evidence of excessive pounding may indicate a problem in the hydraulic unit.
4. Carrier bolts - none loose or missing.
5. Carrier bolting bars - condition of weld to fixed sill.
6. Spring tube - not dented. Any dent over 3/8" deep will interfere with spring operation.
7. Unit carrier - general condition to include welding and absence of damage due to derailment, etc..
8. Seal weepage - the sealing arrangement is designed to allow for a certain amount of oil weepage to provide lubrication to the shaft. The oil capacity of the unit provides for this weepage over an extended period of time. Oil stains should not cause concern unless they are extremely heavy and there is a considerable number of free drops of oil.

## MAINTENANCE

The maintenance of Keystone SA and SA-MS Shock Control units consists of:

1. Restoring the oil to the level indicated in the section entitled "To Check Oil Level".
2. Removing and replacing the return spring.

These two basic procedures are the only maintenance possible in the field. The Shock Control cylinder is sealed at the factory and should not be opened for major servicing except under Keystone supervision. Should the unit require attention or service other than oil level restoration or spring replacement it should be returned to the factory.

## PARTS LIST (See Figure 1)

\*These items welded to car underframe

ITEM NUMBER	DESCRIPTION
*1	Cushion Unit Stop
2	3/4" x 1-3/4" Cap Screws
3	Top Cover Plate
*4	Bolting Bars
5	Spacer Bars (on ACF Built Cars Only)
6	Steel Shims (See Step 2)
7	7/8" Elastic Stop Nut (ASTM A325) Note 1
8	7/8" Flat Washer (ASTM A325) Note 1
9	7/8" x 3" Hex Head Bolts (ASTM A325) Notes 1 & 2
10	Unit Stop and Carrier Assembly
11	SA-20 Hydraulic Unit - Note 3

NOTE 1. Huck type bolts may be substituted.

NOTE 2. On cars with spacer bars (item 5) bolts must be 3-1/2" long.

NOTE 3. SA-20-MS units have a round reservoir instead of the square type illustrated. Procedure for removal is identical.





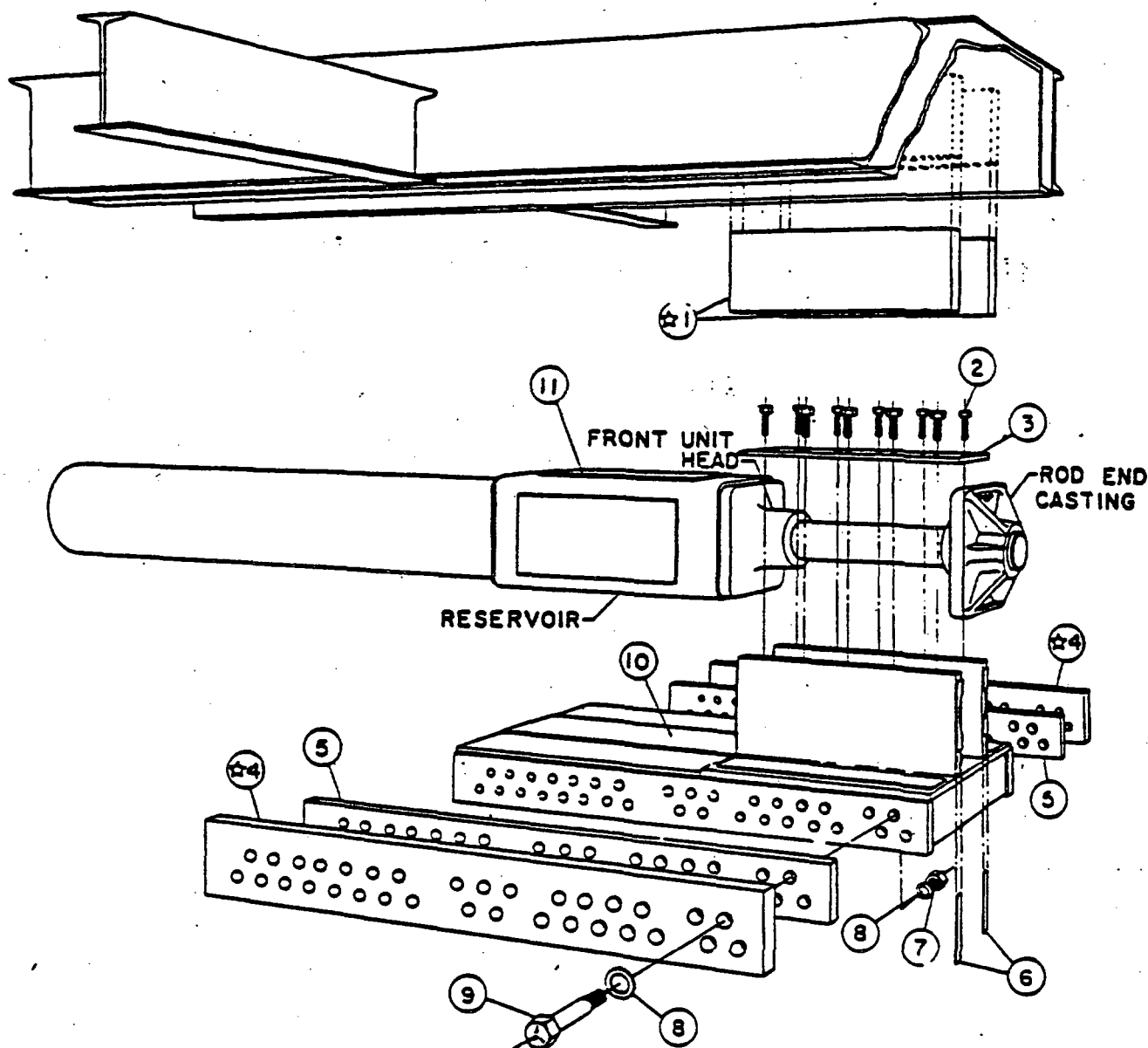


FIGURE 1

# REMOVING MODEL SA-20 & SA-20-MS UNITS FROM CAR

**NOTE:** The total weight of the assembly including hydraulic unit, spring return and carrier which may readily be removed from the car is approximately 2200#.

1. Insure that sliding center sill is properly centered. In the event a sliding center sill is stuck "Off Center", the return spring may be in high compression, sufficient to cause unexpected sill movement. Determine and correct any such condition before proceeding.
2. Cars built by Pacific Car and Foundry Corporation are equipped with special cushion unit lugs. Before attempting to remove units from these cars it is necessary to jack the sill and apply two (2) 1/4" x 1" x 8" steel shims (item 6) between the rod end casting and cushion unit stop and carrier assembly as shown.
3. Remove any brake rigging components and cross tie connections which will interfere with unit removal.
4. After supporting unit and carrier properly, remove the 66 carrier bolts, nuts and washers (items 7, 8 and 9).
5. Remove cushion unit (item 11) and carrier assembly (item 10) from car.

6. Remove the ten (10) cap screws (item 2) from the top cover plate (item 3) and remove the cover from those units equipped with covers.
7. Place a jack between the unit body and the rod end casting, extend the piston and apply two hardwood blocks between the front unit head and rod end casting. Jack may then be removed. The following dimensions will apply:

	Extend piston to	Wood Block Dim.
Units with top cover plates	24-3/8"	2"x4"x24-1/4"
SA units without top cover plates	28-1/8"	2"x4"x28"
SA-MS units w/o top cover plates	26-1/8"	2"x4"x26"

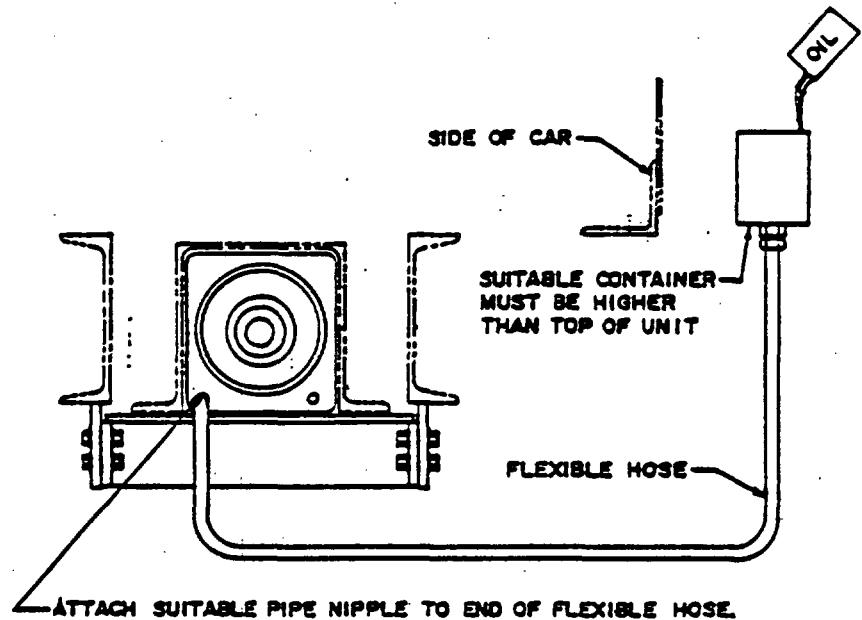
8. Cushion unit (item 11) may now be lifted off the carrier.
9. To reapply unit, reverse procedure. Carrier bolts should be torqued to 470-510 ft. lbs.

If the unit has a scored rod, bent rod, ruptured reservoir, damaged spring tube, it should be returned to Keystone for repair. In the event the condition of the hydraulic unit or spring assembly is questionable, Keystone will provide information to advise the customer in the performance of the repairs.

## TO MAINTAIN OIL LEVEL

The oil level does not require inspection unless there is indication of excessive leakage. When excessive leakage is seen, the following instructions apply:

1. Car should be on level tangent track if unit is in car. If unit is out of car, it must be level.
2. Remove the filler plug on the bottom of the rear cylinder head identified with letter "F" with 3/8" Allen Wrench.
3. Attach arrangement similar to that shown in Figure 2. Remove other filler plug. Add oil, one quart at a time. Use a good quality SAE 10W-30 motor oil. Unit is full when oil runs out open hole. On occasions, when starting to add oil, it may overflow immediately at other hole. Stop oil application and wait several minutes and try again. Repeat at least twice before assuming unit is full.
4. For older models of the Keystone Shock Control which do not have a filler plug marked, proceed as follows:
  - a. For Model SA which can be identified with the position of plugs at lower corners of reservoir head, as shown in Figure 2A, and serial number below 63808, either plug may be used for filler arrangement attachment similar to Figure 2. Use procedure specified in item 3.
  - b. For Model SA-MS, identified by position of plugs which are close to return spring tube, as shown in Figure 2A and with unit serial number below 65062, the right hand plug should be used for filler arrangement attachment similar to Figure 2. Use procedure specified in Item 3.
  - c. For Model SA, identified by position of plugs which are close to lower corners of reservoir head shown in Figure 2A and have serial number above 63808, the left hand plug should be used for filler arrangement attachment similar to Figure 2. Use procedure specified in Item 3.
5. Replace open plug.
6. Remove filling arrangement from the other plug and reapply plug.
7. Tighten both plugs securely. (Approximately 90-100 foot-pounds torque).



END VIEW

FIGURE 2

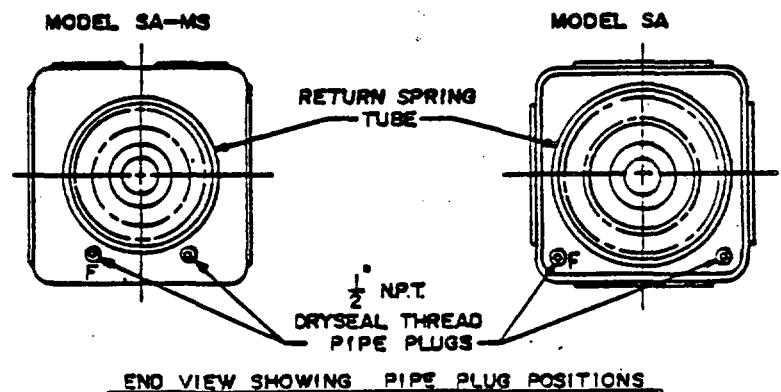
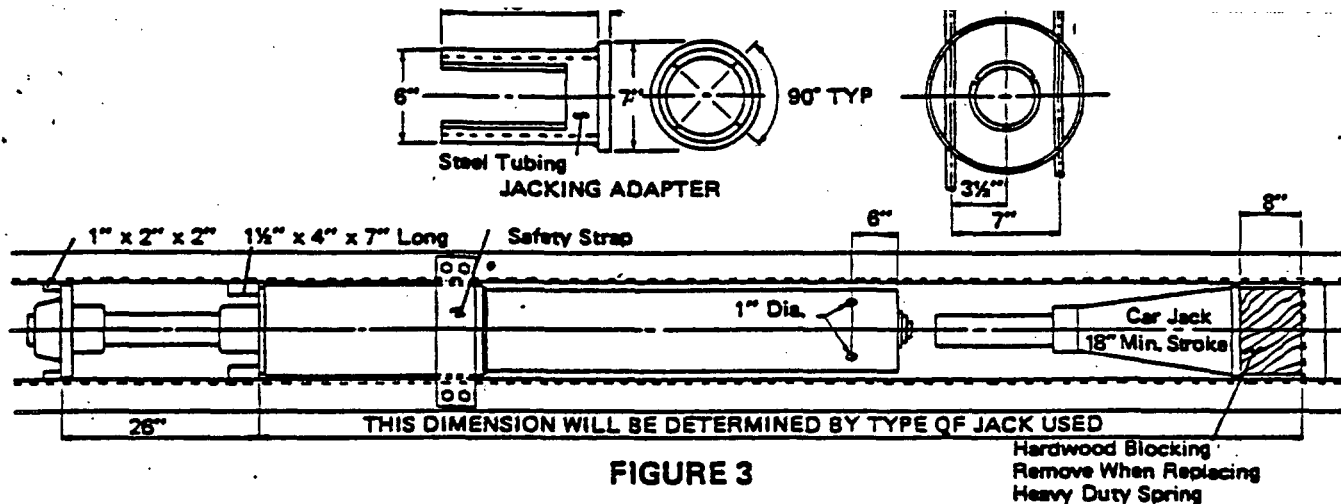


FIGURE 2A

## RETURN SPRING REPLACEMENT

### (A) Units with split bushing type retainer

1. Place the unit in the jacking fixture as shown in Figure 3.
2. Place the adapter over the end of the spring rod and compress the spring sufficiently to allow removal of the three piece bushing.
3. Release the jack until the tension is off the spring.



**FIGURE 3**

5. Inspect the inside of the spring tube for wear. If the wall thickness is less than 3/16" in any place the tube should be replaced. This can be done by CAREFULLY burning the weld from between the spring tube and the rear cylinder head, grinding the spring seat smooth, and applying and rewelding a replacement spring tube.

**NOTE:** When ordering a replacement spring tube, specify diameter and length required.

6. Insert the replacement spring in the spring tube and place the unit in the jacking fixture.
7. With the spring follower in place, apply the jacking adapter to it and compress the spring a sufficient distance to allow insertion of the three piece bushing in the spring follower.
8. Release the jack and remove the jacking adapter after insuring that the spring follower is fully seated on the split bushing.
9. Unit is now ready for reapplication to the car.

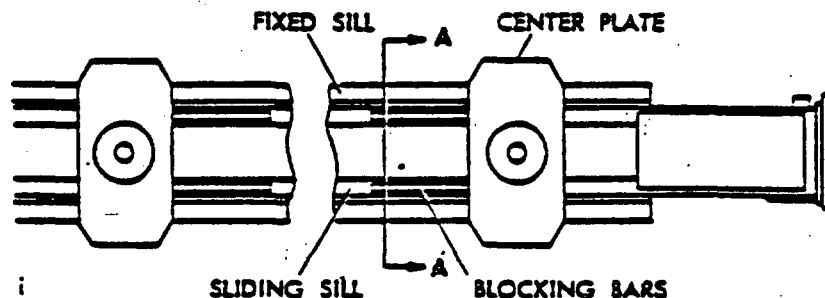
**(B) Units with nut, cotter key and washer type retainer.**

1. Place the unit in the jacking fixture as shown in Figure 3.
2. Place the adapter over the end of the spring rod and compress the spring a sufficient distance to allow two of the four holes to be burned in the spring tube. Locate holes as shown in Figure 3.
3. Release the jack and turn the unit over. Repeat the above procedure so the remaining two holes can be burned in the spring tube.
4. Place the two 3/4" dia. x 12" rods through the burned holes. Release the jack and remove the jacking adapter.
5. Remove the cotter key, nut and washer from the end of the spring rod.
6. Reapply the jacking adapter. Compress the spring sufficiently so that the two 3/4" dia. rods may be removed. Release the jack until the tension is off the spring.
7. Follow steps 4, 5, & 6 under "Units with split bushing type retainer".
8. With the spring follower in place, apply the jacking adapter to it and compress the spring a sufficient distance to allow the 3/4" dia. rods to be relocated in the holes in the spring tube.
9. Release the jack and remove the jacking adapter.
10. Apply the washer, nut and cotter key. Using the jacking adapter, compress the spring sufficiently to remove the 3/4" dia. rods.
11. Release the jack and remove the jacking adapter.
12. Unit is now ready for reapplication to the car.

## SLIDING SILL BLOCKING PROCEDURE

The AAR Manual provides several methods to block the sliding sill with the fixed sill, but most apply to specific car designs. Some cars are equipped with blocks and instructions for their use, and in these cars the owners instructions must be followed. An alternate method which applies to all Keystone sliding sill cars is described below:

Weld four (4) 1" x 3" x 18" bars to the sliding sill directly against each center plate, as shown in Figure 4. Caution must be exercised to prevent damage to the sill due to excessive welding heat.



In addition, when a car is received on a repair track which has been blocked out by this method the bars should be carefully burned off and the sill flange ground smooth to insure proper operation of the sliding sill after repairs to the car have been completed.

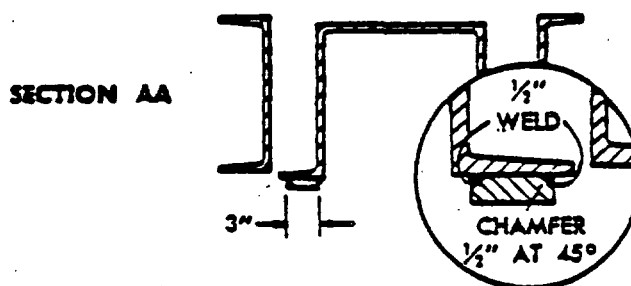


FIGURE 4

For further information regarding a  
specific car or cars, call or write:

**KEYSTONE RAILWAY EQUIPMENT COMPANY**

P. O. Box 717

Simpson Ferry Road • Camp Hill, Pennsylvania 17011

Telephone 717/761-3690

Attention: Service Department

INSTRUCTION NO. CU-101

SUBJECT:

Maintenance of Oil Level in Keystone Double Acting Cushioning Units.

GENERAL:

When cars are received in shop with excessive oil leaking from cushioning unit, the oil level is to be checked as outlined in the Keystone Shock Control Inspection and Maintenance Manual.

If more than eight (8) quarts of oil must be added to fill the unit, the unit must be removed and repacked per the Keystone Shock Control Inspection and Maintenance Manual. If less than eight (8) quarts are required to fill the unit, the unit is to be steam cleaned and stencilled as follows:

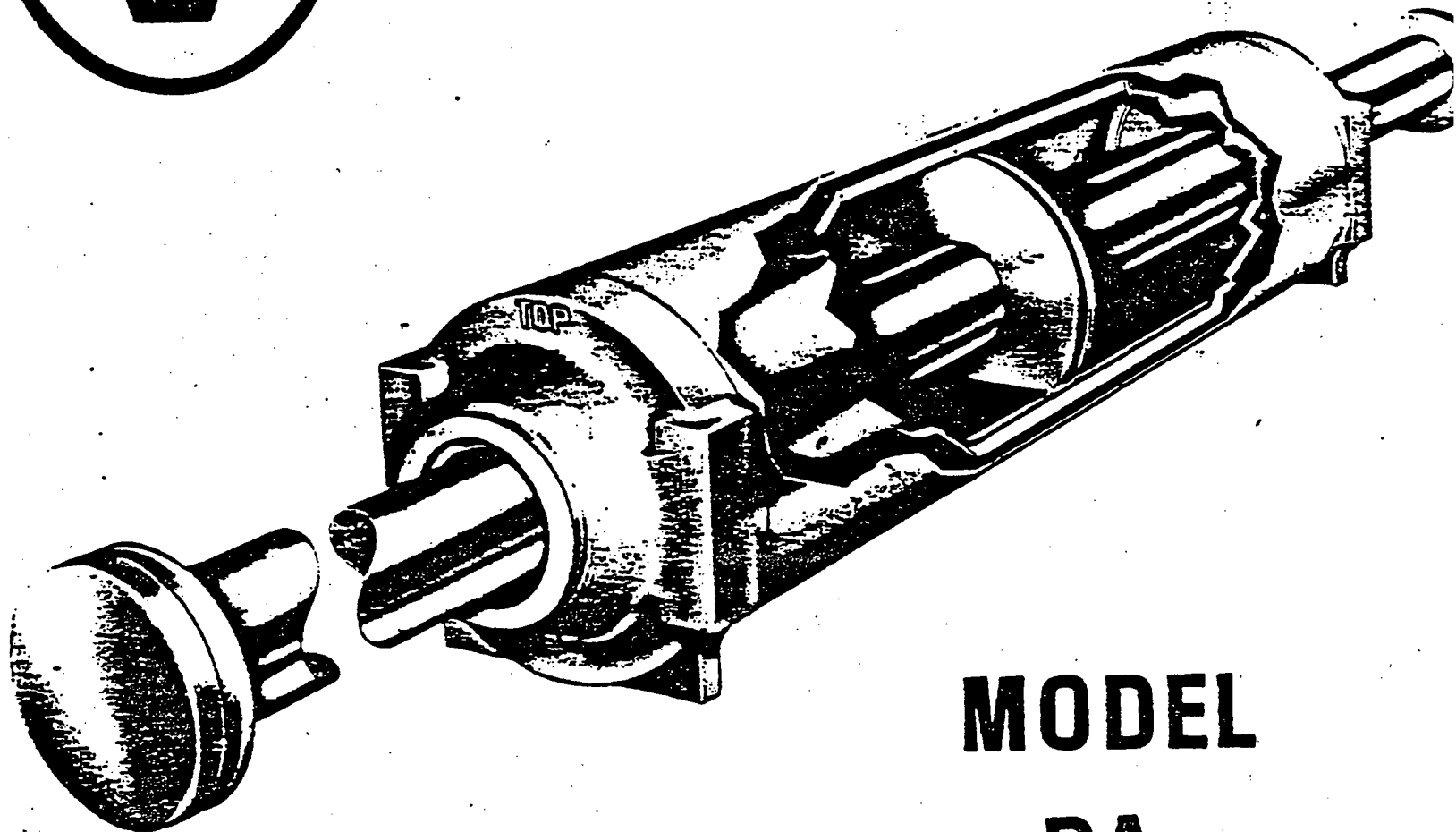
OIL CHECKED    -    DATE \_\_\_\_\_    SHOP \_\_\_\_\_

When cars are received in shop with unit stencilled (indicating previous inspection) and unit is suspected of leaking, oil is to be checked. If more than six (6) quarts of oil is required for the first year since stencilled date, the unit must be repacked.

Note attached Keystone Shock Control Inspection and Maintenance Manual which is included as a reference to this instruction, No. D-5.



# KEYSTONE SHOCK CONTROL



**MODEL  
DA**

**INSPECTION  
AND  
MAINTENANCE**

Oil Capacity — 62 qts.  
 Oil Type — SAE 10W-30  
 Weight (approximate) — 1330 lbs.  
 Overall Length 108-5/8 in.

## INSPECTION PROCEDURE

1. Any time a cushion underframe car, regardless of manufacturer, is on a repair truck, it is wise to inspect the complete underframe thoroughly and correct any deficiencies.
2. Insure that the sliding sill is properly centered. In the event that a sliding sill is stuck "off center", the return spring, may be in high compression, sufficient to cause unexpected sill movement.
3. Oversolid stops — evidence of excessive pounding may indicate a problem in the hydraulic unit.
4. Carrier bolts — none loose or missing.
5. Return Spring Assembly — broken spring, proper engagement between spring stops and followers, broken spring rods, general condition to include welding and absence of damage due to derailment, etc.
6. Unit Reservoir — not dented. Any dent over 3/8" deep will interfere with operation.
7. Unit carriers and piston stops — general condition to include welding and absence of damage due to derailment, etc.
8. Seal weepage — the sealing arrangement is designed to allow for a certain amount of oil weepage to provide lubrication to the shaft. The oil capacity of the unit provides for this weepage over an extended period of time. Oil stains should not cause concern unless they are extremely heavy and there is a considerable number of free drops of oil.

## Maintenance of Keystone SHOCK CONTROL

Maintenance of the Keystone SHOCK CONTROL Hydraulic Unit consists mainly of:

- 1) Restoring the oil to the level indicated in Figure 1.
- 2) Removing and replacing the rod seals at each end of the cylinder, when necessary.

These two basic, simple procedures are the only maintenance required. The SHOCK CONTROL CYLINDER is sealed at the factory and should not be opened for major servicing except under Keystone supervision.

Should the cylinder require attention or service other than the above, it should be returned to the factory:

## To Check Oil Level

The oil level does not require inspection except where there is evidence of excessive leakage. Should excessive leakage be indicated, the following instruction will apply:

*Cars Equipped with Access Holes in the Floor:*

- 1) Remove access cap in floor of car. Unscrew one of the two pipe plugs with a 9/16" Allen wrench. (See drawing.)

*Cars Not Equipped with Access Holes in the Floor:*

Drop unit from sliding sill and unscrew filler plug as described above.

size diameter of the inner of right pressure cylinder. The unit must be level during this measurement.

- 3) If the oil level is low, fill to proper level with SAE 10W-30 motor oil.

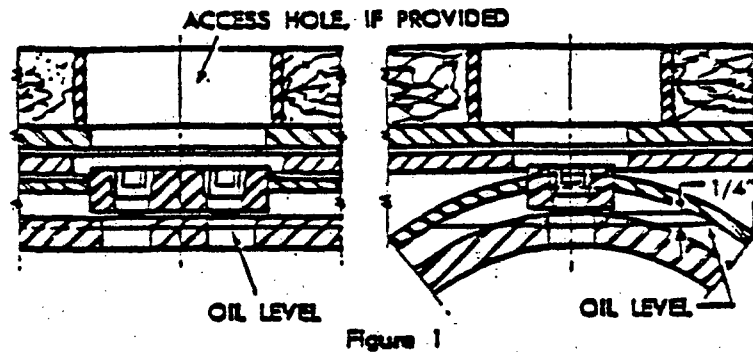


Figure 1

## To Replace Rod Seals

Remove the hydraulic unit from the car and place in a location with a clean working area, care must be taken to avoid damaging of piston rod. Place unit on a pair of sturdy supports.

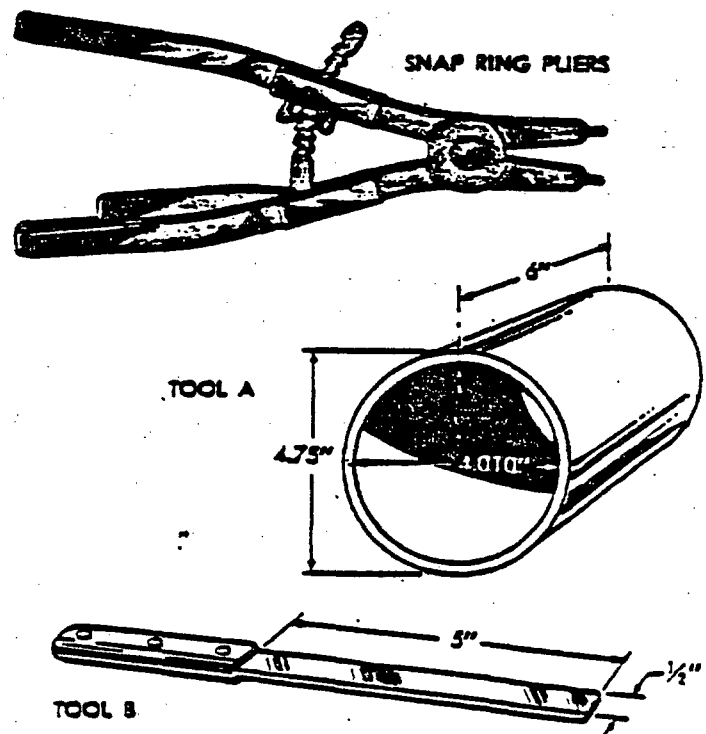


Figure 2

Unit weighs approximately 1330 lbs. It is not necessary to remove oil to change packing seals.

- 1) Remove the bellows clamps.
- 2) Remove rod end cups by turning in a counter-clockwise direction.
- 3) Remove bellows from unit.
- 4) Remove one (1) filler plug and attach a shop air line with air control valve to unit.
- 5) Remove snap ring with snap ring pliers at one end of unit. New style snap rings may be removed with ordinary screwdriver.
- 6) Apply sufficient pressure to the unit to force wiper rod seals, and pressure ring from housing.

sure the 7 small springs from pressure ring are removed and not lodged in the packing gland.

**CAUTION!!!**  
DO NOT APPLY  
MORE THAN  
100 PSI TO  
THE UNIT

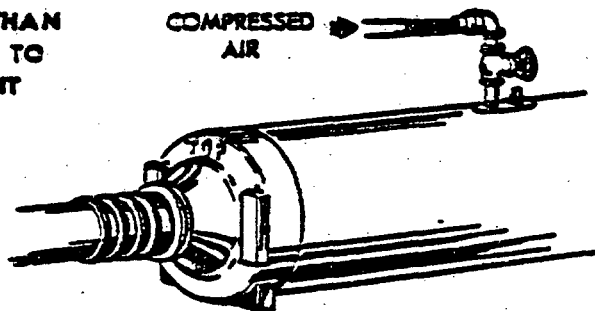
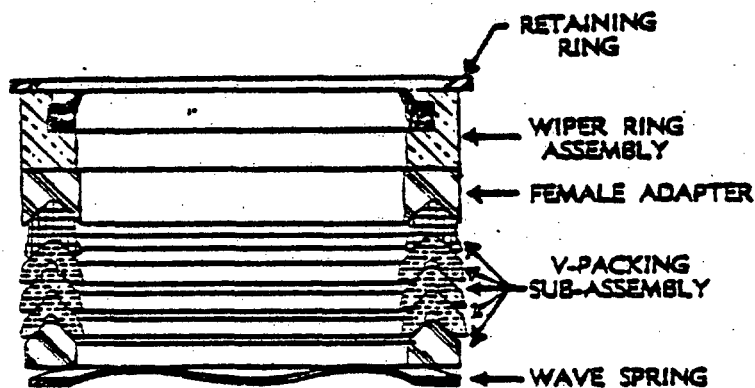


Figure 4

- 8) The packing, springs, pressure ring, and wiper ring should be replaced with new material.
- 9) Apply the new wave spring over the rod and push into place inside packing gland.



**DA Repacking Kit Part No. 7-A-5558**

Figure 5

- 10) Apply the male adapter over the rod and push into place with tool A.
- 11) The packing should be submersed in oil prior to assembling into the unit, allow excess oil to drip off each ring prior to installation.
- 12) Applying the packing over rod, one ring at a time, and place into opening at end of reservoir using tool B to ensure that edges are not curled under the ring. Then, continue to press the packing ring into the groove using tool A. Continue this process one ring at a time until all of the packing is in place.
- 13) Apply the female adaptor over the rod and push into place with tool A.

using tool A.

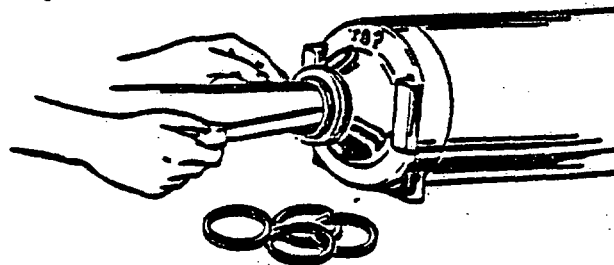


Figure 6

- 15) Apply the retaining ring with the snap ring pliers.
- 16) Seat retaining ring with tool A ensuring a fit into the groove. Repeat steps 5 to 15 for replacing the seal assembly at the other end of the unit.
- 17) Replace bellows.
- 18) Replace rod end cups.
- 19) Remove the air line.
- 20) Replace filler plugs sufficiently tight to prevent leakage.
- 21) Place unit into car.

Tools are available from Keystone Railway Equipment Company, Simpson Ferry Road, Camp Hill, Pennsylvania 17011.

#### Maintenance Parts Available

The parts listed below may be obtained from Keystone Railway Equipment Company by writing to:

**Keystone Railway Equipment Company**  
Simpson Ferry Road,  
Camp Hill, Pennsylvania 17011

	Part No.		Part No.
Repack Kit	7-A-5558	Rod Cup	7-A-453
includes:		Bellows	7-8-449
(1) Wiper Ring Assy.		Bellows Clamp	7-A-566
(1) Female Adaptor		Rod Cup Stud	7-A-617
(1) V-Packing Sub-Assy.			
(1) Retaining Ring			
(1) Wave Spring			

#### Inspection and Servicing of Units and Springs from Wrecked Freight Cars

**NOTE:** Care must be exercised in servicing the spring assembly, for the spring is under compression and may cause injuries if not properly removed from the sill.

If the unit has a scored rod, bent rod, ruptured reservoir tube or other obvious serious damage, it should be returned to Keystone for repair.

In the event the derailment damaged the spring assembly or the condition of the unit is questionable, Keystone will provide information to advise the customer in the performance of the repairs.

#### Return Spring Assembly

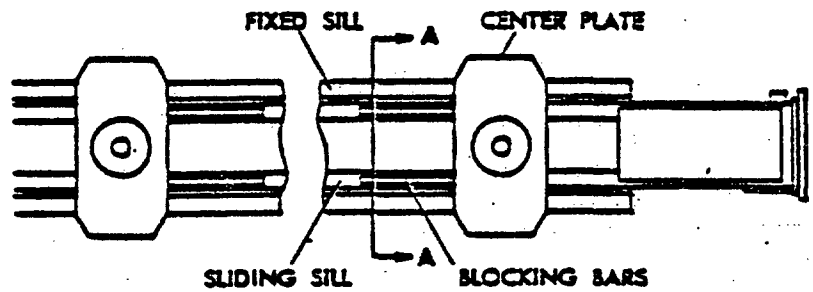
Replacement and Repair. See Forms DA 1-74-1, DA 1-74-2, DA 1-74-3 and DA 1-74-4.



## SLIDING SILL BLOCKING PROCEDURE

The AAR Manual provides several methods to block the sliding sill with the fixed sill, but most apply to specific car designs. Some cars are equipped with blocks and instructions for their use, and in these cars the owners instructions must be followed. An alternate method which applied to all Keystone sliding sill cars is described below:

Weld four (4) 1" x 3" x 18" bars to the sliding sill directly against each center plate, as shown in Figure 4. Caution must be exercised to prevent damage to the sill due to excessive welding heat.



In addition, when a car is received on a repair track which has been blocked out by this method the bars should be carefully burned off and the sill flange ground smooth to insure proper operation of the sliding sill after repairs to the car have been completed.

SECTION AA

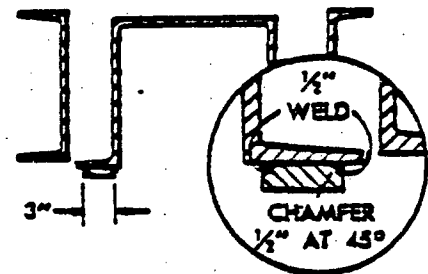
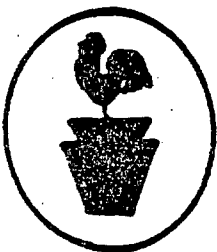


Figure 7



**KEYSTONE RAILWAY EQUIPMENT COMPANY**

**SIMPSON FERRY RD., BOX 717, CAMP HILL, PA. 17011**

**717/761-3690**

**TELEX 84-2390**

27. SIDE BEARING AND COUPLER HEIGHTS:

Side bearing and coupler heights are to be adjusted to AAR requirements as follows:

- a. Side Bearing: 3/16" minimum to 5/16" maximum
- b. Coupler Heights: To be 33-1/2" to 34-1/2"
- c. Shank Clearance at striker top to be 1/4" to 7/8"

28. PAINTING AND STENCILLING:

All cars are to receive brush blast to remove loose surface material as a primer preparation. Cars are then given one coat of chrome free, lead free finish paint. All paints must meet EPA 3.5 VOC levels. Cars are to be stencilled as required by AAR Specifications.

Office of Chief Mechanical Officer-Car  
Chessie System  
Huntington, West Virginia

August 7, 1984 FGC/jlb

Repair Information

- I. All Cars described in Exhibit A with inside width dimensions less than 9'4" are equipped with side wall fillers. Upon removal of side wall fillers the Cars are able to attain the required 9'4"-9'7" width dimension.
- II. All side wall fillers are to be removed and replaced with plywood lining.
- III. Ceiling patches will be of galvanized steel.
- IV. Side walls will be repaired with materials in kind.
- V. End walls will be repaired with materials in kind.
- VI. Door linings will be repaired with materials in kind.
- VII. Floors will be repaired as in Exhibit B.

CERTIFICATE OF ACCEPTANCE

Fruit Growers Express Company  
3220 Duke Street  
Alexandria, Virginia 22314

Attention:

The Chesapeake and Ohio Railway Company  
The Baltimore and Ohio Railroad Company  
P. O. Box 6419  
Cleveland, Ohio 44101

Attention: Louis Recher

As an inspector and duly authorized representative of The Chesapeake and Ohio Railway Company and The Baltimore and Ohio Railroad Company, I do hereby certify that I have inspected and accepted, on behalf of said parties under that certain Lease Agreement dated as of November 1, 1984, between Fruit Growers Express Company ("FGE") and The Chesapeake and Ohio Railway Company and The Baltimore and Ohio Railroad Company, the following units of equipment ("Equipment"):

Equipment: RBL type refrigerator cars

AAR Mechanical Designation: RBL

No. of Units:

\*Road Nos.:

I do further certify that the Equipment conforms to the Specifications, requirements and standards applicable thereto.

The execution and delivery of this Certificate shall in no way relieve FGE of its continuing Lease obligations with respect to the Equipment.

Inspector and Authorized Representative

Dated this \_\_\_\_ day of \_\_\_\_\_, 198\_\_.

\* - Indicate whether road numbers set forth are C&O or B&O.

UNDEPRECIATED COST OF LADING DEVICES

<u>Car Series</u>	<u>Month/Year of Construction</u>	<u>Number of Cars</u>	<u>Undepreciated After 5 Years</u>	<u>Cost Per Car After 10 Years</u>
B&O 894221-894320	Sept., 1967	50	\$477.00	* -0-
C&O 894321-894420	Oct., 1967	18	484.00	* -0-
B&O 896230-896326	Sept., 1969	95	588.00	* -0-
C&O 896331-896377	Sept., 1969	47	719.00	* -0-
C&O 897535-897559	July, 1971	25	1,004.00	** -0-
B&O 897814-897857	July, 1971	43	978.00	** -0-
B&O 897428-897459	Nov., 1970	30	935.00	** -0-
B&O 897531-897534	Dec., 1970	4	943.00	** -0-
FGER 97460-97530	Nov., 1970	<u>38</u>	942.00	** -0-

350

\* Includes cost of two one-piece load dividers and sidefillers. Although sidefillers are to be removed from Cars subject to this Lease, continued amortization of costs related thereto will be assumed throughout the term of this Lease.

\*\* Includes cost of AIR-PAK load dividers only.

CONDITION OF CARS UPON RETURN

At the expiration of the underlying Lease Agreement, each Car shall be returned in the following condition:

(1) Interior. The interior shall have all end lining, side lining and ceiling in place. Any interior repairs shall be made with materials of the same type as used in the original construction or as used in rehabilitating the Cars pursuant to Article 3 of the Lease. There shall be no holes or breaks exposing insulation over 2" in diameter or of equivalent area. The floor shall not have cuts, gouges or breaks more than 1" in width in any one place through more than 25% of the material thickness.

(2) Lading Devices. All component parts of load dividers and side fillers (if so equipped) shall be in place and in working order.

(3) Exterior. The exterior, including roof, shall have no cuts, breaks or other damage enabling water to enter the Car's exterior shell. Any exterior repairs shall be made with materials of the same type as used in the original construction or as used in rehabilitating the Cars pursuant to Article 3 of the Lease and shall be applied in a workmanlike manner providing proper structural strength and appearance. All "cardable" damage under the AAR Interchange Rules shall be repaired prior to return of Cars unless FGE waives such repairs when presented with Defect Card from damaging road or endorsed Joint Inspection Certificate.

(4) Doors. The doors shall be in place and in working order, and capable of being operated by one average man, without damage to tracks and top retainers. The metal sheathing and interior lining of the doors shall be without cuts, holes or breaks exposing insulation and enabling water to enter the insulation cavity.

(5) Underframe, Draft Arrangement, Brakes and Trucks. The underframe, draft arrangement, brakes and trucks shall be in place, in good condition and in compliance with the AAR Interchange Rules and FRA Freight Car Safety Standards. All such equipment which becomes missing or worn beyond condemning limits as specified in contemporaneous AAR Interchange Rules during the term of this Agreement shall be repaired or replaced with components or materials acceptable under the AAR Interchange Rules, or if not covered by the Rules, repaired or replaced with components or materials of the same type as used in the original construction or as used in rehabilitating the Cars pursuant to Article 3 of the Lease. All Periodic Maintenance required by the AAR Interchange Rules shall be performed prior to return of Cars to FGE.